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DIVISION OF GEOLOGICAL SURVEY  
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# 1983 REPORT ON OHIO MINERAL INDUSTRIES

WITH  
DIRECTORIES OF REPORTING  
COAL AND INDUSTRIAL MINERAL OPERATORS

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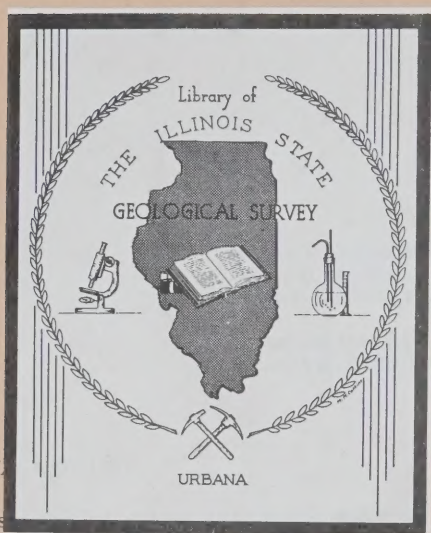
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STATE OF OHIO  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF GEOLOGICAL SURVEY  
Horace R. Collins, Chief

# **1983 REPORT ON OHIO MINERAL INDUSTRIES**

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compiled by  
Margaret R. Sneeringer

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## FOREWORD

The 1983 *Report on Ohio mineral industries* marks a significant change in the issuing of mineral statistics for the State of Ohio. First, 1983 is the first year that the gathering and reporting of these statistics was solely under the direction of the Division of Geological Survey. Ohio House Bill 385, which was signed into law in December 1981 and became effective in early 1982, transferred the responsibility of collecting and publishing Ohio mineral statistics from the Ohio Department of Industrial Relations, Division of Mines to the Ohio Department of Natural Resources, Division of Geological Survey. At the time of transfer the Division of Mines had already accumulated data for all of 1981 and the first two quarters of 1982. By mutual agreement with the Division of Mines, the Division of Geological Survey also assumed responsibility for publishing the data for these two years. To eliminate possible confusion, no attempt was made to alter the reporting format or change concepts for these two years, except to change the dimensions of the report to 8½ by 11 inches, the standard size for reports of the Geological Survey.

A major goal from the outset was to publish the mineral statistics in a timely fashion. This 1983 annual report was delivered to the printer five months after the fourth-quarter-1983 report-filing deadline, and preliminary data are now published on a quarterly basis in *Ohio Geology*, the Division of Geological Survey newsletter. Most users of these data will consider this a major improvement in timeliness.

The 1983 report contains several changes from the previous style. In the coal section, changes include providing both sales and production information. Production figures are used for the majority of the tables, but the tables dealing with value and disposition of coal reflect the actual sales of coal. In this way, more accurate figures can be furnished for the value of coal sold during the year, and better information can be provided on those operations that may not have produced coal during the year, but rather have sold from stockpiled coal. With the changes in reporting format, more detailed coal-washing information is being collected on mine-mouth wash plants as well as on offsite, centralized coal-washing plants, thereby providing more complete coal-washing statistics. These figures now reflect the actual amount of coal washed during the year, including stockpiled and purchased coal, instead of just that percentage of coal washed from the current production year. Another addition to this year's report is a table providing information on employment for reclamation performed by the operators. Reclamation is an important aspect of the coal-mining operation that should not be neglected.

For industrial minerals, the major change has been to report sales figures in the tables instead of production figures. This change was made to allow for those operations that do not calculate actual production figures, but tabulate only the tonnage sold. However, both production and sales figures are requested on the report forms, and a *reported known production* figure is provided for each commodity based on those operators who do report production tonnage. Other changes include a breakdown of sales by county for each industrial mineral, and the addition of a table showing the employment in industrial minerals by county and by commodity. These changes are designed to give a more complete indication of the geographic distribution of mineral production and related employment.

A decision also was made to include short articles and other text materials. For this first issue, individuals representing trade associations for each of the major mineral groups were asked to submit a short statement on behalf of their industry group. In future issues, articles from other perspectives will be presented. It is our goal to make the annual minerals report both a more timely document and a more useful one to those companies, public agencies, and individuals requiring information on mineral production in Ohio.

Horace R. Collins  
Division Chief and  
State Geologist

Appreciation is expressed to Douglas L. Crowell for his assistance in the compilation of directories contained in this report.



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## MINERAL RESOURCES AND THE ECONOMY OF OHIO

by

Horace R. Collins  
Division Chief and State Geologist

Ohio is one of the nation's major mineral-producing states, currently ranking 15th in total annual value of nonfuel minerals produced. Raw minerals mined in Ohio, including both fuel and nonfuel resources, are presently valued at over \$2 billion a year. This figure, as large as it is, does not reveal the true value of Ohio's mineral resources when the impact of minerals on everyday life and on our standard of living is considered. All Ohioans use mineral resources in some fashion whether they realize it or not. The mineral industries are estimated to provide over 27,600 jobs to those directly involved in mining or production. Furthermore, many thousands of people are employed in the processing or conversion of mineral resources into everyday products, and additional thousands are employed in businesses that supply products and services to the mineral-producing industry. Ohio's mining industry accounted for 3.6 percent of the Ohio Gross State Product in 1982.

Mineral resources produced in Ohio fall into the two broad categories of industrial minerals and mineral fuels. The term "mineral" is used here in the broad sense and includes materials more correctly termed "rocks." The fuels and industrial minerals discussed in this report are all naturally occurring, geologically derived resources. The industrial minerals include limestone, dolomite, sandstone, shale, clay, salt, gypsum, peat, sand, and gravel. The mineral fuels are coal, oil, and natural gas. In 1982, the latest year for which national ranking is available, Ohio ranked seventh or higher among the states in the production of coal, clay, sand and gravel, salt, sandstone, limestone, and dolomite. These rankings, along with other significant mineral production, combine to keep Ohio in the top third among the nation's states in mineral output, which is valued far above the value of all the gold and silver mined in other states.

### INDUSTRIAL MINERALS

Limestone and dolomite form the surface bedrock over nearly half the total area of the state. The Silurian- and Devonian-age rocks of western Ohio contribute by far the majority of the carbonate rocks produced in Ohio.

Limestone and dolomite have been produced in Ohio since the earliest days of statehood. The availability of limestone along with low-grade native iron ore and abundant fuel supplies played a major role in Ohio becoming a leader in the production of iron and steel. Native limestone was used as early as 1804 for blast-furnace flux stone. Hydraulic cement made from local stone was used in the locks and other works of the many canals built in the state in the early 1800's, and the first road in the nation to be paved by concrete was laid in Ohio in 1891.

Limestone and dolomite have continued to be major mineral-resource commodities in Ohio and are the tonnage leaders among the industrial minerals produced here. Although uses have changed somewhat over the years, carbonate rocks still supply the raw materials for burnt lime, chemicals, concrete aggregate, railroad ballast, flux stone

for the making of iron and steel, and noncalcined agricultural lime. Limestone and dolomite also are playing an increasingly important role in environmental and pollution control. Such controls include use of crushed limestone and dolomite for filter beds in sewage-treatment plants, for neutralization of acid wastes from mines and industrial plants, and for reduction of sulfur dioxide emissions through fluidized-bed combustion or stack-gas scrubbing at coal-burning power stations.

Limestone is the principal raw material used in the manufacture of portland cement, which is extensively used in the construction of dams, highways, sidewalks, homes, and many commercial and industrial buildings. Limestone rock dust is used in underground coal mines to reduce the hazards of fires and explosions. The largest use, however, of crushed limestone and dolomite is as construction aggregate. Limestone and dolomite presently constitute 53 percent of all aggregates produced in Ohio; sand and gravel account for 44 percent and slag the remaining 3 percent.

Sand and gravel in Ohio are largely a product of the Pleistocene Ice Age. The vast ice sheets that once covered the state led to the deposition, through a number of processes, of sand and gravel in the ice-covered portions of the state and in stream valleys leading away from the ice front. Major sand and gravel deposits suitable for exploration are generally associated with drainageways that carried huge quantities of water and sediment from the melting ice sheets. Good-quality deposits are therefore irregular in shape and limited in distribution.

In 1982 Ohio was the fourth-largest producer of sand and gravel in the United States. Sand and gravel are bulk commodities used primarily by the basic construction industry. The most important use of sand and gravel is for concrete, which is composed of about 85 percent aggregates. Finer grades of sand are used in plaster, mortar, and concrete block. Most buildings, sidewalks, highways, and other facilities in which concrete is employed use substantial quantities of sand and gravel. Areas of sand and gravel deposits are commonly excellent building sites because of good drainage conditions; sand and gravel deposits also are generally good sources of ground water. For these reasons intense competition for land may exist between those who would use the deposits for aggregate production and those who would make other use of the sites. Increased competition for land underlain by sand and gravel and the depletion of deposits in some areas of the state is likely to trigger a move toward greater use of crushed stone.

Because sand and gravel as well as crushed stone for aggregate are high-bulk low-profit items, their cost is largely controlled by the cost of transportation from the mine site to the point of use. Most sand and gravel is sold within about 25 miles of its point of production, as transportation costs double with a haul distance of only a few miles. Obviously from a cost standpoint, it is important that pit and quarry sites be located near the point of use. Considering the fact that sand and gravel have limited geographic distribution,



careful thought should be given to any zoning or governmental policies that would tend to prevent or restrict access to these valuable resources.

Ohio has long been a leader in the ceramics industry; the science of ceramic engineering was largely developed at the Ohio State University by Edward Orton, Jr., Ohio's fourth State Geologist. Vitrified sewer tile, for example, was developed in Ohio; the sewer systems of cities in the eastern United States make extensive use of tile made from Ohio's native clays and shales. Clay and shale are widely used in the manufacture of house brick, sewer and field tile, ceramic tile, refractory brick, pottery, and cement. The common house brick is probably the most familiar product of clay and shale, and few homes or buildings in Ohio do not make some use of brick.

Pennsylvanian-age rocks of the eastern and southeastern counties of the state produce the majority of the clay and shale mined in Ohio. Fire clays, for example, are found exclusively beneath several of the coal seams in this region. Common clays and shales also are produced in eastern Ohio and in lesser quantities from other areas and geologic units of the state. The use of these native resources by the state's well-developed ceramic industry made Ohio the nation's second-largest producer of fire clay and the fourth-largest producer of common clay in 1982.

Throughout the history of mankind, common salt has probably been one of the most avidly sought after mineral resources. Native American Indians were producing salt by evaporating weak natural-brine seeps near Jackson, Ohio, long before European settlers came into the area. The need for salt for curing and seasoning attracted early European settlers to the "salt licks" or seeps used by the native Indians. One of the first acts of the Ohio legislature following statehood in 1803 was to establish regulations for the use of such brine seeps.

Today Ohio is a leader in salt production, currently ranking fourth in the nation. Salt is an extremely valuable mineral resource for which society finds many uses beyond those of the early settlers. Although common table salt is probably the most widely known use, it actually accounts for an extremely small portion of the tonnage produced in Ohio each year. Salt is an important raw material for the chemical industry, with soda ash and chlorine being major by-products. Soda ash is used in the manufacture of glass and paper, and chlorine bleach is a common household product. Huge quantities of salt are used for snow and ice control during the winter months.

Salt today comes primarily from deeply buried bedded deposits of Silurian-age rock salt, composed of the mineral halite, underlying the eastern and northeastern counties of the state. The salt is extracted either by creating and producing artificial brines or by mining. Artificial brines are created by pumping fresh water into the bedded rock salt and pumping out the saturated water. This artificial brine is then evaporated to produce salt. Two underground mines along the shore of Lake Erie produce rock salt at depths of between 1,700 and 2,000 feet below the surface and extend out under Lake Erie for a distance of over 1 mile. This salt is used primarily for ice control.

Gypsum is an industrial mineral formed under geological conditions similar to those under which rock salt was deposited. Deposits in Ohio are significant, although rather small in extent. Known deposits of gypsum are found in Silurian-age rocks in the Sandusky Bay region of Ottawa County. These deposits are very valuable because they are located within an important construction, manufacturing, and agricultural area.

Gypsum was being produced in the Sandusky Bay area as early as 1822. These deposits were originally developed to produce land plaster, which is finely ground gypsum used as a fertilizer and soil conditioner. At the present time the principal use is for the manufacture of wallboard, lath, and gypsum plaster. Gypsum was formerly mined in Ottawa County both underground and by the open-pit method; however, in recent years, only surface methods have been used.

Ohio has long been a major producer of sandstone. Although the specific uses of sandstone have changed through time, production tonnage is now double that of the era when sandstone was used primarily for building stone. Ohio can boast of having both the deepest (at 250 feet) and the largest (with over 500,000,000 tons of stone removed) sandstone quarries in the world. These famous quarries, both in the Mississippian-age Berea Sandstone in the South Amherst region of north-central Ohio, produced huge quantities of stone for architectural use. Although there is still some demand for building stone, other uses have come to the forefront and overshadowed building stone. Ohio now produces high-purity sand and silica flour for the glass and pottery industries, along with "frac" sand used by the oil-well-drilling industry. Dimension sandstone is produced for window sills, facings on buildings and homes, patios, and decorative walls. Ohio is the only state still producing natural grindstones. Other uses include the manufacture of pool-table tops and chemical-laboratory counter tops and specialty products for the steel industry and for petroleum-research laboratories. All these uses of this valuable resource combine to place Ohio third in the United States in the production of sandstone.

## MINERAL FUELS

Ohio's most important mineral resource is coal. Coal production has suffered a serious decline over the past 14 years; however, Ohio ranks seventh in the nation in production, and the value of coal mined in 1983 exceeded \$1.09 billion. Coal reserves in Ohio are still large, also ranking seventh nationally, and in fact new reserves are being added to the resource base each year from the discovery of previously unexplored deep coal seams.

The coal measures of Ohio underlie all or parts of 32 counties in eastern Ohio and cover over 12,000 square miles. Over 60 named coals occur in the approximately 1,750-foot-thick coal-bearing rock sequence; however, only about 14 of these have been or can be considered to be important.

The first recorded commercial coal mining in Ohio was in 1800, when 100 tons were reported mined. Since that time Ohio has become a major coal-producing state and a leader in the development of strip-mining methods, equipment, and reclamation. Although production has been largely from the open-pit method over the past several decades, Ohio has large reserves of coal which will ultimately be recovered through deep mining.

Ohio's coals are used largely for the generation of electricity. The principal constraint on the use of the state's native coal resources is the normally high sulfur levels in Ohio coals. Sulfur levels of most seams can be lowered somewhat by mechanical coal washing, and the percentage of washed coal has risen steadily over the past few years. For sulfur which cannot be mechanically removed, new technologies such as chemical cleaning, fluidized-bed combustion, scrubbers, gasification, or liquefaction will be required in order for Ohio coal to recover its place in the economy.

Ohio was one of the first states to commercially produce



oil and gas. Drilling for natural gas for domestic and industrial use began in the 1850's and the first oil well in Ohio was drilled in 1860, just 1 year after the famous Drake well. Over 150,000 wells have been drilled in the intervening years, and oil and gas have been found in 68 of Ohio's 88 counties. It has been estimated that over 58 percent of the land area of the state is either productive or has potential for oil and gas.

Production levels have varied considerably since natural gas first entered the marketplace; however, since 1950 the production curve has been basically upward, with current annual production in excess of 151 billion cubic feet. The rate of discovery of new reserves in Ohio is currently exceeding production. In 1950 Ohio was producing about 5 percent of its gas consumption. This percentage has steadily risen until presently approximately 17 percent of the state's needs are being produced locally. This increase in self-reliance is related in part to conservation and decreased usage, but is also attributable in large measure to the success of self-help gas. Self-help gas is the phrase used to define natural gas that a manufacturer or other industrial concern, a school, or an individual may find and exploit through their own financing for their own use. Self-help gas obviously has benefited Ohio by increasing its degree of self-sufficiency and by providing some gas supplies not subject to interruption by outside forces.

Oil production in Ohio peaked around the turn of the century and then steadily dropped until about 1950. From 1950 to the present, annual production has slowly increased from about 4 million barrels to approximately 15 million barrels. The most recent data available suggest that Ohio is producing only about 5 percent of its oil needs. The increased production of oil over the past several years reflects in large measure the general increase in the price of crude oil. A portion of the increased oil production also can be credited to more aggressive exploration strategies and better development and production techniques.

#### MINERALS AND THE SURVEY

Mineral resources have been produced in all of Ohio's 88 counties, direct mineral-production jobs in Ohio approach

30,000, in 1983 the raw value of Ohio minerals was over \$2 billion, and native minerals currently account for 3.6 percent of the Ohio Gross State Product; clearly these resources are vital to the state's overall economic well-being. It is equally vital that accurate technical data on the location, quantity, quality, and use potential of Ohio's resources be available to the general public, to industry, and to governmental agencies. As Ohio moves toward the year 2000, programs to meet the challenges of a new century will be needed. Oil and gas will be in even shorter supply than at present, while demands for energy in all forms will increase. Pressures on the land for competing uses will increase as society's need for minerals grows even greater. Detailed geological and other technical information will be needed to deal with increasingly complex problems of wise management and stewardship of Ohio's resources.

The Division of Geological Survey is expanding existing programs and developing new programs to provide information to meet these challenges. Over the next several years the Geological Survey will be developing detailed geologic maps and comprehensive reports on the geology and mineral resources of each county. County investigations will include the search for previously unknown resources which would strengthen the state's economic potential. Other programs to assist in wise development include tabulating the existing reserves of the state's fuels and industrial minerals. Current programs to characterize the physical and chemical properties of the resources will be expanded to provide detailed technical information needed for increased efficiency and new utilization methods as well as to protect the environment from any negative aspects of extraction and use.

Knowledge of Ohio's geology and mineral resources is obviously of great importance to its citizens. Wise use of minerals, well-informed public policies, healthy productive mineral industries, adequate protection of the environment, and development of zoning and land-use ordinances all depend on accurate, objective, and readily available geologic and mineral resource data on which to make informed decisions. Providing such information is the challenge the Geological Survey must meet over the next two decades.

#### 1983 OHIO MINING ACTIVITIES IN BRIEF

Reports were filed in 1983 for 460 coal operations and 579 industrial mineral operations for a total of 1,039 mining and related operations. Of those reports filed, coal production was reported at 313 operations, and industrial mineral

production was reported at 463 operations. There were 14 mines reporting production of coal and one or more industrial minerals and 30 mines reporting the production of multiple industrial minerals (including those mines producing coal and multiple industrial minerals). There were 6,165 new wells drilled for oil and gas in 1983, of which 5,736 were productive and 429 were dry.

The total value<sup>1</sup> of coal was \$1,096,959,092 in 1983; the value of oil and gas was \$904,136,357; and the total value<sup>1</sup> of all industrial minerals was \$218,157,924 in 1983.

<sup>1</sup>Includes reported and estimated values. Some operations reporting sales did not report a value for those sales. A statewide average price per ton was calculated for each commodity based on sales for which the value was reported. This calculated average was used to estimate the value of sales or captive-use material for which the actual value was not reported.

TABLE 1.—1983 Mineral sales and production in Ohio

Commodity	Production <sup>1</sup>	Sales <sup>2</sup>
Coal	33,216,630 tons	33,606,994 tons
Limestone and dolomite	25,579,358 tons	31,061,835 tons
Sand and gravel	10,532,670 tons <sup>3</sup>	23,582,049 tons <sup>3</sup>
Salt	2,373,033 tons	2,316,604 tons
Sandstone and conglomerate	837,445 tons	1,509,447 tons
Clay	825,484 tons	958,461 tons
Shale	1,353,384 tons	1,353,384 tons
Gypsum	224,097 tons	224,097 tons
Peat	16,709 tons	14,137 tons
Gas	151,299,859 MCF <sup>4</sup>	<sup>5</sup>
Oil	14,971,072 barrels	<sup>5</sup>

<sup>1</sup>Production as reported. Many operators do not know actual production figures and report only sales.

<sup>2</sup>Includes material for captive use.

<sup>3</sup>Does not include sand and gravel dredged from Lake Erie or Maumee River.

<sup>4</sup>Thousand cubic feet.

<sup>5</sup>Figure not available.

## THE COAL INDUSTRY IN OHIO

by

Neal S. Tostenson

President, Ohio Mining and Reclamation Association

The Ohio Mining and Reclamation Association is a trade association organized in 1945 by Ohio coal producers to promote reclamation and land use after mining.

"Coals" in Ohio were recorded in Stark and Tuscarawas Counties and in the vicinity of Athens County on a 1755 map. Early settlers in eastern Ohio used outcropping coal for home and farm use. Coal production in Ohio has been recorded since 1800, when 100 tons were reported mined in Jefferson County. Commercial coal production has grown from these early beginnings to an all-time high of 55 million tons in 1970.

Both strip and underground methods are used in mining Ohio coal. Underground mining was the primary method until the 1940's, when World War II called for increased production and strip mining became the dominant mining method.

Ohio coals are primarily used for steam generation, with the majority being consumed by electric-utility companies.

In 1983, Ohio electric-utility companies purchased approximately 40.3 million tons of coal. Of that, 22.3 million tons came from Ohio mines.

Because of the high sulfur content of Ohio coals, utility demand for Ohio coal has diminished as the 1970 Clean Air Act has been implemented. Utilities have switched to lower sulfur coal not found in abundance in Ohio. As a result of this coal switching, Ohio coal production has dropped to 33.2 million tons in 1983, which is the lowest level in over three decades. There are idle deep mines and large stripping shovels, such as the Mountaineer and the Silver Spade, patiently awaiting coal orders.

Over the years, coal has been the largest contributor to the economy of southeastern Ohio. Currently, every 1 million tons of coal production in Ohio means \$25 million to \$30 million to the Ohio economy. Every million tons of coal produced also means 250 direct mining jobs and 475 indirect jobs for a total payroll of \$13 million.

## COAL

Coal was produced at 313 mines in 24 Ohio counties during 1983. Production decreased 14.6 percent from 1982, totalling 33,216,630 tons in 1983, with 22,394,739 tons produced at 299 surface mines, and 10,821,891 tons produced at 14 underground mines. In comparison to 1982, there were 30 more mines reporting production of less than 50,000 tons, 8 fewer mines producing between 50,000 and 499,999 tons, 2 fewer mines producing between 500,000 and 999,999 tons, and 1 fewer mine reporting production of 1,000,000 tons or greater; there was a net increase of 19 mines in 1983.

The five leading counties for 1983 production were Belmont, Monroe, Harrison, Noble, and Muskingum Counties; these counties produced 52.5 percent of the 1983 total production. A total of 33,606,994 tons of coal were sold<sup>2</sup> in

1983, with a total value<sup>3</sup> of \$1,096,959,092. The average price per ton of coal sold was \$32.64.

In underground mining, 67.5 percent of the coal was mined by continuous miner, 31.3 percent of the coal was produced by longwall mining, and 1.2 percent of the coal was produced by conventional mining. In surface operations, 2.5 percent of the coal produced was auger mined, and the remainder was strip mined.

The Pittsburgh (No. 8) coal was the most heavily mined seam, followed by the Meigs Creek (No. 9), Middle Kittanning (No. 6), Clarion (No. 4A), and Lower Kittanning (No. 5) seams. Coal produced from these five seams made up 77.1 percent of the total 1983 production.

A total of 20,803,335 tons of coal were reported as washed in 1983. Reports from 29 coal-washing plants indicate a 28.8 percent loss in washing.

Trucking was the primary means of coal disposition, carrying 35.9 percent of the total sales. Rail transported 21.8 percent, conveyor belts carried 22.6 percent, and water

<sup>2</sup>See Foreword, p. iii, for discussion of use of sales figures vs. production figures.

<sup>3</sup>Includes reported and estimated values. See footnote 1, p. 3.



transport carried 19.1 percent of the coal sold in 1983; 0.6 percent was handled by other undesignated means. A total of 2.5 percent of the coal produced was reported as stored.

The total average annual employment was reported as

9,545 employees, 6,401 of whom were production employees. The average annual wage earned by production employees was \$28,505, based on those employees for whom wages were reported. Wages earned by all employees totalled \$273,468,657 in 1983.

TABLE 2.—1983 Ohio coal production by production-size group and change from 1982

Production-size group	1983		Change from 1982 (short tons)
	Number of mines reporting	Production (short tons)	
Under 25,000 tons	137	1,473,707	+344,452
25,000 to 49,999 tons	55	2,031,777	-245,024
50,000 to 99,999 tons	61	4,285,833	-64,370
100,000 to 249,999 tons	36	5,556,869	-1,694,241
250,000 to 499,999 tons	11	3,832,343	-590,988
500,000 to 999,999 tons	8	6,226,352	-1,078,756
1,000,000 tons and over	5	9,809,749	-2,337,054
TOTAL	313	33,216,630	-5,665,981

TABLE 3.—1983 Ohio coal production by county and mining method

County <sup>1</sup>	All methods (short tons)	Underground					Surface			
		Number of mines reporting	Production (short tons)				Number of mines reporting	Production (short tons)		
			Total	Longwall	Conventional	Continuous miner		Total	Strip	Auger
Athens	2,658						1	2,658	2,658	
Belmont	6,810,754	3	1,674,038			1,674,038	59 <sup>2</sup>	5,136,716	4,960,321	176,395
Carroll	233,311						9 <sup>2</sup>	233,311	229,512	3,799
Columbiana	988,007	1	8,662			8,662	36	979,345	949,428	29,917
Coshocton	1,274,883						17	1,274,883	1,246,977	27,906
Gallia	275,325						3	275,325	275,292	33
Guernsey	399,008						8	399,008	355,686	43,322
Harrison	2,803,038	2	1,733,116	558,406	47,818	1,126,892	17	1,069,922	1,011,367	58,555
Hocking	550,618						8	550,618	550,618	
Holmes	361,374						7	361,374	361,374	
Jackson	707,438	1	86,860			86,860	12	620,578	620,578	
Jefferson	1,836,214						22	1,836,214	1,780,654	55,560
Lawrence	410,173						2 <sup>2</sup>	410,173	410,068	105
Mahoning	210,170						6	210,170	192,008	18,162
Meigs	2,259,488	2	2,259,488	986,742		1,272,746				
Monroe	2,877,716	2	2,877,716	1,847,082		1,030,634				
Muskingum	2,336,420						14 <sup>2</sup>	2,336,420	2,334,556	1,864
Noble	2,614,922						5	2,614,922	2,567,243	47,679
Perry	1,852,219	2	1,413,872		82,018	1,331,854	7	438,347	438,072	275
Stark	1,039,519						18	1,039,519	1,032,798	6,721
Tuscarawas	1,411,789						33	1,411,789	1,337,544	74,245
Vinton	1,640,128	1	768,139			768,139	12	871,989	871,989	
Washington	267,484						1	267,484	245,353	22,131
Wayne	53,974						2	53,974	53,974	
TOTAL	33,216,630	14	10,821,891	3,392,230	129,836	7,299,825	299	22,394,739	21,828,070	566,669

<sup>1</sup>Production from mines operating in more than one county was evenly split between the counties involved unless a by-county breakdown was provided by the operator.

<sup>2</sup>Does not include mines extending into this county from adjoining counties.

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TABLE 4.—1983 Ohio coal production by county and month

County <sup>1</sup>	Production (short tons)												
	Total annual	January	February	March	April	May	June	July	August	September	October	November	December
Athens	2,658	0	0	0	0	0	0	0	350	800	662	534	312
Belmont	6,810,754	739,050	638,448	606,228	496,764	542,912	552,155	454,172	580,778	576,061	572,595	513,423	538,168
Carroll	233,311	27,510	28,965	20,578	23,960	11,233	13,740	13,202	17,126	17,761	20,511	15,109	23,616
Columbiana	988,007	93,017	69,198	45,759	67,640	70,053	95,704	72,149	100,757	91,745	96,061	102,736	83,188
Coshocton	1,274,883	129,395	93,832	81,826	103,781	123,455	119,480	103,465	102,642	98,030	111,591	105,464	101,922
Gallia	275,325	17,787	21,004	20,618	23,232	22,911	25,876	14,629	26,090	28,528	29,642	24,909	20,099
Guernsey	399,008	45,884	26,536	13,983	13,082	15,125	22,286	24,704	32,059	42,245	61,364	55,806	45,934
Harrison	2,803,038	273,616	222,037	263,252	234,052	246,043	256,261	177,447	229,527	232,358	234,962	202,379	231,104
Hocking	550,618	47,646	42,991	35,351	47,590	41,358	59,296	33,765	36,921	37,290	52,067	27,556	88,787
Holmes	361,374	34,114	20,532	21,778	30,742	25,703	24,036	24,438	35,679	25,152	33,940	38,354	46,906
Jackson	707,438	76,501	53,137	50,163	59,830	35,810	58,604	60,800	77,159	91,413	38,992	47,371	57,228
Jefferson	1,836,214	144,135	134,076	165,347	128,404	134,192	145,966	137,167	180,952	167,247	173,234	159,245	166,249
Lawrence	410,173	21,498	33,311	30,107	33,148	31,124	38,612	16,633	44,885	39,992	42,516	42,258	37,089
Mahoning	210,170	22,147	15,357	18,086	22,151	18,714	26,851	12,360	15,145	21,636	11,889	15,016	10,818
Meigs	2,259,488	0	0	80,932	0	313,892	291,239	218,505	349,163	291,022	236,664	223,775	254,296
Monroe	2,877,716	132,826	222,293	290,498	230,132	249,554	230,061	143,946	246,787	268,207	269,393	258,461	335,558
Muskingum	2,336,420	211,285	194,430	147,777	213,438	215,204	217,082	168,562	180,222	229,330	219,862	229,330	185,006
Noble	2,614,922	193,873	184,803	216,532	215,176	220,710	202,244	186,172	232,948	270,478	243,587	229,275	219,124
Perry	1,852,219	163,659	124,672	143,411	147,924	170,522	181,576	147,715	183,158	175,800	147,157	160,010	106,615
Stark	1,039,519	136,602	81,328	69,269	62,615	46,902	53,232	65,043	87,291	91,673	127,585	114,530	103,449
Tuscarawas	1,411,789	129,557	115,516	77,037	86,814	99,638	119,699	131,914	131,861	116,303	135,253	140,491	127,706
Vinton	1,640,128	117,621	67,936	82,428	74,947	156,372	157,248	139,772	163,254	171,705	181,831	162,190	164,824
Washington	267,484	25,439	21,272	28,930	22,185	15,140	18,758	19,654	18,576	19,111	17,702	20,167	40,550
Wayne	53,974	7,275	6,677	11,648	7,146	1,743	1,674	3,216	1,810	5,897	3,275	2,349	1,264
TOTAL	33,216,630	2,790,437	2,418,351	2,521,538	2,344,753	2,808,310	2,911,680	2,369,430	3,075,140	3,033,676	3,062,765	2,890,738	2,989,812

<sup>1</sup>Production from mines operating in more than one county was evenly split between the counties involved unless a by-county breakdown was provided by the operator.



TABLE 5.—1983 Ohio coal production by county and seam

County <sup>1</sup>	Production (short tons)										
	Total	Sharon (No. 1)	Lower Mercer (No. 3)	Upper Mercer (No. 3A)	Tionesta (No. 3B)	Brookville (No. 4)	Clarion (No. 4A)	Lower Kittanning (No. 5)	Strasburg (No. 5A)	Middle Kittanning (No. 6)	Lower Freeport- Rogers (No. 6A)
Athens	2,658									2,658	
Belmont	6,810,754										
Carroll	233,311							45,474		91,156	
Columbiana	988,007		7,845			46,349		268		787,740	6,383
Coshocton	1,274,883					39,344		348,384		887,155	
Gallia	275,325									147,469	
Guernsey	399,008							21,487		60,732	
Harrison	2,803,038										1,733,116
Hocking	550,618					24,850		15,937		205,653	304,178
Holmes	361,374					66,872		254,259		40,243	
Jackson	707,438	83,191	10,847			59,801	347,481	102,949		103,169	
Jefferson	1,836,214							7,685		79,089	
Lawrence	410,173							69,478			
Mahoning	210,170					143,479		32,491		34,200	
Meigs	2,259,488						2,259,488				
Monroe	2,877,716										
Muskingum	2,336,420							20,231		860,775	
Noble	2,614,922										
Perry	1,852,219							72,123		1,759,983	20,113
Stark	1,039,519					155,352		414,867	100,035	330,087	25,846
Tuscarawas	1,411,789			25,226	61,379	44,321		451,209	27,778	731,987	
Vinton	1,640,128		130,937			226,945	967,929	255,770		47,486	
Washington	267,484										
Wayne	53,974		27,931			26,043					
TOTAL	33,216,630	83,191	177,560	25,226	61,379	833,356	3,574,898	2,112,612	127,813	6,169,582	2,089,636

County <sup>1</sup>	Production (short tons)								
	Upper Freeport (No. 7)	Anderson	Harlem	Pittsburgh (No. 8)	Pomeroy- Redstone (No. 8A)	Meigs Creek (No. 9)	Uniontown (No. 10)	Waynesburg (No. 11)	Washington (No. 12)
Athens									
Belmont				2,147,438		2,326,654	75,854	1,911,862	348,946
Carroll	1,490		71,709	23,482					
Columbiana	139,422								
Coshocton									
Gallia					127,856				
Guernsey	125,853	461		190,475					
Harrison	167,269		182,544	508,633	140,435	62,863		8,178	
Hocking									
Holmes									
Jackson									
Jefferson			13,450	1,367,710	246,315	510		121,455	
Lawrence					340,695				
Mahoning									
Meigs									
Monroe				2,877,716					
Muskingum	71,267	26,488		10,016		1,347,643			
Noble				40,155		2,574,767			
Perry									
Stark	13,332								
Tuscarawas	69,889								
Vinton	11,061								
Washington						267,484			
Wayne									
TOTAL	599,583	26,949	267,703	7,165,625	855,301	6,579,921	75,854	2,041,495	348,946

<sup>1</sup>Production from mines operating in more than one county was evenly split between the counties involved unless a by-county breakdown was provided by the operator.

TABLE 6.—1983 Disposition of Ohio coal, by county

County <sup>1</sup>	Number of mines	Disposition <sup>1</sup> (short tons)						Stored
		Total <sup>2</sup>	Rail	Water	Truck	Conveyor	Unspecified/ other	
Athens	1	2,658			2,658			
Belmont	63	6,746,450	3,421,408	1,955,108	1,362,554	6,857	523	389,673
Carroll	9 <sup>3</sup>	233,311			233,311			500
Columbiana	37	984,692			978,741		5,951	
Coshocton	18	1,269,760		65,116	323,142	881,502		11,900
Gallia	3	275,325		127,856	62,881		84,588	
Guernsey	8	413,582	24,844	195,900	192,838			6,615
Harrison	21	2,921,225	1,659,338	611,630	643,591		6,666	244,771
Hocking	8	550,618		86,084	405,607		58,927	
Holmes	7	361,374			361,374			
Jackson	13	707,408			707,408			
Jefferson	21	1,825,895		172,713	1,653,182			12,927
Lawrence	2 <sup>3</sup>	410,173		340,695	69,478			
Mahoning	6	213,050			213,050			
Meigs	2	2,511,253				2,511,253		93,433
Monroe	2	2,852,500		2,852,500				
Muskingum	14 <sup>3</sup>	2,336,420			315,841	2,020,567	12	
Noble	5	2,611,524		30,876	416,156	2,164,462	30	
Perry	8	1,870,732	1,379,986		490,746			15,446
Stark	18	1,037,446			1,007,837		29,609	3,650
Tuscarawas	33	1,553,289	59,398		1,468,131		25,760	32,900
Vinton	13	1,637,795	772,149		863,420	2,226		13,530
Washington	1	226,540			226,540			
Wayne	2	53,974			53,974			
TOTAL	315	33,606,994	7,317,123	6,438,478	12,052,460	7,586,867	212,066	825,345

<sup>1</sup>Tonnage of coal shipped from mines operating in more than one county was evenly split between the counties involved and type(s) of disposition reported unless a by-county breakdown was provided by the operator.

<sup>2</sup>Does not reflect tonnage stored. Reflects tonnage sold and shipped from mine.

<sup>3</sup>Does not include mines extending into this county from adjoining counties.

TABLE 7.—1983 Rail shipments of Ohio coal, by county of origin and carrier

County <sup>1</sup>	Number of mines	Shipments <sup>1</sup> (short tons)				
		Total	Conrail	B & O	N & W	C & O
Belmont	16	3,421,408	1,612,036	520,832	1,288,540	
Guernsey	1	24,844		24,844		
Harrison	5	1,659,338	797,040		862,298	
Perry	2	1,379,986	1,379,986			
Tuscarawas	1	59,398			59,398	
Vinton	2	772,149		12,194		759,955
TOTAL	27	7,317,123	3,789,062	557,870	2,210,236	759,955

<sup>1</sup>Tonnage of coal shipped from mines operating in more than one county was evenly split between the counties involved and the carriers reported unless a by-county breakdown was provided by the operator.



TABLE 8.—1983 Washed Ohio coal

		Washed coal (short tons)	Percent
By seam	From surface mines	10,682,533	51.4
	From underground mines	10,120,802	48.6
	TOTAL <sup>1</sup>	20,803,335	100.0
By type of mining	Clarion (No. 4A)	3,383,898	16.3
	Middle Kittanning (No. 6)	1,882,148	9.0
	Lower Freeport-Rogers (No. 6A)	849,009	4.1
	Pittsburgh (No. 8)	6,155,491	29.6
	Meigs Creek (No. 9)	4,934,565	23.7
	Waynesburg (No. 11)	1,815,219	8.7
	Other <sup>2</sup>	1,783,005	8.6
	TOTAL <sup>1</sup>	20,803,335	100.0

*Loss from washing*

	Washed coal (short tons)	Percent
Weight before washing	28,641,824	100.0
Weight after washing <sup>3</sup>	20,385,634	71.2
Loss in washing	8,256,190	28.8

<sup>1</sup>These figures reflect total washed coal in 1983 and do not necessarily reflect only 1983 production. In 1983, 40.6% of the total production was reported as unwashed. Coal not designated as washed or unwashed was assumed to be unwashed.

<sup>2</sup>Other = combined Sharon (No. 1), Lower Mercer (No. 3), Upper Mercer (No. 3A), Tionesta (No. 3B), Brookville (No. 4), Lower Kittanning (No. 5), Upper Freeport (No. 7), Redstone (No. 8A), Uniontown (No. 10), and Washington (No. 12).

<sup>3</sup>Reported "weight after washing" does not equal totals by type of mining or by seam because all raw tonnages were not reported. Totals were adjusted to arrive at correct loss-in-washing percentage.

TABLE 9.—1983 Dollar value of coal at mine, by county

County <sup>1</sup>	Tonnage sold (short tons)	Value at mine <sup>2</sup> (dollars)	Per ton average (dollars)
Athens	2,658	\$34,555	\$13.00
Belmont	6,746,450	220,377,334	32.67
Carroll	233,311	6,905,748	29.60
Columbiana	984,692	19,117,676	19.41
Coshocton	1,269,760	42,559,591	33.52
Gallia	275,325	7,899,180	28.69
Guernsey	413,582	13,136,516	31.76
Harrison	2,921,225	103,099,647	35.29
Hocking	550,618	10,232,184	18.58
Holmes	361,374	6,565,264	18.17
Jackson	707,408	15,106,310	21.35
Jefferson	1,825,895	52,038,873	28.50
Lawrence	410,173	12,991,808	31.67
Mahoning	213,050	4,206,150	19.74
Meigs	2,511,253	125,784,132	50.09
Monroe	2,852,500	123,985,068	43.47
Muskingum	2,336,420	76,989,839	32.95
Noble	2,611,524	92,330,968	35.36
Perry	1,870,732	50,437,753	26.96
Stark	1,037,446	15,867,403	15.29
Tuscarawas	1,553,289	34,076,943	21.94
Vinton	1,637,795	54,450,438	33.25
Washington	226,540	7,394,266	32.64
Wayne	53,974	1,371,446	25.41
TOTAL	33,606,994	\$1,096,959,092	\$32.64

<sup>1</sup>Sales reported from mines operating in more than one county were evenly split between the counties involved unless a by-county breakdown was provided by the operator.

<sup>2</sup>The FOB value of coal sold was estimated for those mines which failed to report this information and for those mines which reported an FOB value considered to be unreliable. These estimates were calculated using a statewide-average price per ton based on reported FOB values deemed to be reliable.

TABLE 10.—1983 Ohio coal-mine employment<sup>1</sup>, by occupational group and month

Occupational group	Monthly average	Number of employees											
		January	February	March	April	May	June	July	August	September	October	November	December
All production workers	6,401	6,199	6,071	5,515	6,477	6,463	6,419	6,589	6,661	6,721	6,514	6,627	6,555
Underground mines	793	977	958	849	769	784	716	745	727	736	760	783	712
Tonnage employees	2,125	1,489	1,472	1,356	2,362	2,354	2,316	2,358	2,335	2,362	2,351	2,385	2,355
Underground production employees	147	164	162	148	146	147	141	147	142	143	141	148	140
Surface production employees													
Surface mines	3,319	3,567	3,477	3,157	3,184	3,159	3,227	3,320	3,441	3,470	3,225	3,289	3,309
Strip miners	17	2	2	5	16	19	19	19	16	10	37	22	39
Auger miners	161	117	133	126	145	167	178	186	183	171	204	176	146
Reclamation													
Supervisory, technical, and clerical	1,751	1,670	1,666	1,679	1,835	1,811	1,833	1,755	1,756	1,746	1,764	1,752	1,748
Central preparation plant, central shop, etc.	1,232	1,267	1,271	1,155	1,239	1,246	1,220	1,211	1,232	1,241	1,238	1,248	1,216
TOTAL	9,545	9,253	9,141	8,475	9,696	9,687	9,650	9,741	9,832	9,879	9,720	9,803	9,665

<sup>1</sup>Reflects employment as reported. Employment was not included for mines which were owner operated or where coal extraction was incidental to principal operation.



TABLE 11.—1983 Ohio coal-mine production employment<sup>1</sup>, by county and month

County <sup>2</sup>	Number of employees												
	Monthly average	January	February	March	April	May	June	July	August	September	October	November	December
Athens	2	0	0	0	0	0	0	3	3	6	5	5	5
Belmont	1,121	1,532	1,456	1,138	1,049	1,032	1,018	1,104	1,102	1,136	946	950	984
Carroll	44	51	50	51	48	44	38	40	39	38	41	42	49
Columbiana	178	193	187	188	159	158	158	162	170	174	187	198	205
Coshocton	239	259	226	199	237	254	256	262	253	238	232	229	227
Gallia	62	59	59	60	60	61	62	61	61	61	67	69	69
Guernsey	58	63	52	35	39	46	51	65	71	66	74	73	63
Harrison	631	695	695	699	689	688	583	597	621	600	570	568	573
Hocking	50	61	61	44	51	52	55	45	44	48	47	49	45
Holmes	23	31	20	27	28	21	21	21	21	21	21	21	21
Jackson	52	69	57	56	64	47	42	48	54	57	40	42	47
Jefferson	291	305	309	310	266	255	269	292	308	315	292	284	284
Lawrence	67	47	56	56	56	60	63	70	79	78	79	79	79
Mahoning	42	48	48	43	43	40	42	40	40	41	41	40	38
Meigs	628	60	62	62	816	810	809	811	817	820	826	823	822
Monroe	805	792	785	787	760	770	779	826	787	788	842	900	839
Muskingum	514	497	518	376	529	508	521	470	488	557	537	575	588
Noble	420	420	413	416	421	420	427	433	440	429	413	398	409
Perry	425	458	444	439	424	428	440	439	419	417	412	413	362
Stark	140	190	189	166	104	109	101	87	111	113	173	177	165
Tuscarawas	210	159	177	164	180	195	208	241	247	229	235	247	237
Vinton	384	193	190	185	436	447	458	452	466	469	431	440	439
Washington	11	12	12	11	15	15	15	17	17	17	0	0	0
Wayne	4	5	5	3	3	3	3	3	3	3	3	5	5
TOTAL	6,401	6,199	6,071	5,515	6,477	6,463	6,419	6,589	6,661	6,721	6,514	6,627	6,555

<sup>1</sup>Reflects employment as reported. Employment was not included for mines which were owner operated or where coal extraction was incidental to principal operation.<sup>2</sup>For those operations reporting activity in more than one county, employment was evenly split (to the nearest whole employee) between the counties involved unless a by-county breakdown was provided by the operator.TABLE 12.—1983 Ohio coal-mine employment<sup>1</sup> in central preparation plants, central shops, etc., by county and month

County <sup>2</sup>	Number of employees												
	Monthly average	January	February	March	April	May	June	July	August	September	October	November	December
Belmont	241	303	295	222	227	229	231	246	243	251	216	217	212
Columbiana	34	32	30	28	22	24	22	42	42	41	40	40	39
Coshocton	14	26	24	4	24	27	26	5	5	5	10	8	7
Gallia	6	5	4	5	8	9	8	5	4	6	8	9	8
Guernsey	2	4	4	4	1	1	1	1	1	1	1	1	1
Harrison	259	277	280	280	264	264	245	246	244	245	258	253	252
Hocking	3	3	3	3	3	3	3	3	3	3	4	4	4
Jackson	18	27	25	20	22	19	18	15	16	16	13	14	14
Jefferson	49	54	55	55	42	41	42	43	43	42	57	57	59
Lawrence	8	5	6	5	6	5	6	5	6	6	16	14	15
Mahoning	12	8	8	8	11	10	9	15	14	8	16	17	17
Meigs	210	180	178	178	209	212	211	215	227	228	227	227	228
Monroe	80	79	78	78	79	81	82	87	84	84	74	80	74
Muskingum	34	29	32	32	29	29	35	35	42	39	29	36	36
Noble	22	20	21	20	22	22	22	23	22	24	23	22	22
Perry	71	74	70	71	76	75	76	70	70	73	73	74	53
Scioto	13	20	20	20	20	20	10	9	9	9	8	8	8
Stark	12	12	13	14	34	34	34	0	1	1	1	1	1
Tuscarawas	60	72	88	71	43	43	42	45	58	62	63	63	64
Vinton	82	37	37	37	94	95	94	98	95	94	98	100	99
Wayne	2	0	0	0	3	3	3	3	3	3	3	3	3
TOTAL	1,232	1,267	1,271	1,155	1,239	1,246	1,220	1,211	1,232	1,241	1,238	1,248	1,216

<sup>1</sup>Reflects employment as reported. Employment was not included for mines which were owner operated or where coal extraction was incidental to principal operation.<sup>2</sup>For those operations reporting activity in more than one county, employment was evenly split (to the nearest whole employee) between the counties involved unless a by-county breakdown was provided by the operator.

TABLE 13.—1983 Ohio coal-mine employment<sup>1</sup> in supervisory, technical, and clerical positions, by county and month

County <sup>2</sup>	Number of employees												
	Monthly average	January	February	March	April	May	June	July	August	September	October	November	December
Belmont	253	259	263	269	248	247	242	249	249	251	256	251	255
Carroll	8	9	9	9	8	7	7	9	9	8	8	8	8
Columbiana	42	60	61	59	45	45	45	29	29	30	36	32	35
Coshocton	48	52	52	51	48	49	50	48	45	42	45	45	45
Gallia	24	22	21	23	23	22	24	23	23	24	26	26	26
Guernsey	4	3	3	3	4	4	4	4	4	4	6	6	6
Harrison	197	200	201	201	205	201	204	188	185	186	198	195	198
Hocking	9	9	9	9	9	9	9	8	8	8	8	9	9
Holmes	4	4	2	3	7	9	7	3	2	2	4	4	4
Jackson	10	10	10	11	11	10	11	11	11	11	9	9	10
Jefferson	54	60	62	61	52	53	53	48	47	47	55	55	56
Lawrence	23	26	26	26	27	27	26	16	16	16	22	22	22
Mahoning	10	14	13	13	14	12	12	8	8	7	7	7	5
Meigs	248	135	131	132	280	280	285	284	288	292	291	291	291
Monroe	308	331	334	346	328	309	303	294	298	292	290	286	280
Muskingum	113	109	110	110	112	109	111	115	118	118	113	117	117
Noble	108	115	113	113	108	108	115	116	114	114	92	93	92
Perry	101	100	102	102	101	101	104	101	102	101	103	103	97
Stark	31	52	52	48	30	29	30	22	22	22	20	20	20
Tuscarawas	50	33	35	32	54	58	59	59	58	52	55	54	54
Vinton	100	56	46	47	110	111	121	117	117	116	120	119	118
Washington	6	11	11	11	11	11	11	3	3	3	0	0	0
TOTAL	1,751	1,670	1,666	1,679	1,835	1,811	1,833	1,755	1,756	1,746	1,764	1,752	1,748

<sup>1</sup>Reflects employment as reported. Employment was not included for mines which were owner operated or where coal extraction was incidental to principal operation.<sup>2</sup>For those operations reporting activity in more than one county, employment was evenly split (to the nearest whole employee) between the counties involved unless a by-county breakdown was provided by the operator.TABLE 14.—1983 Ohio surface coal-mine reclamation employment<sup>1</sup>, by county and month

County <sup>2</sup>	Monthly average	January	February	March	April	May	June	July	August	September	October	November	December
Belmont	26	13	18	16	15	19	14	30	32	19	51	44	38
Carroll	1	2	2	0	2	2	2	0	0	0	0	0	0
Columbiana	5	4	4	4	9	9	9	9	5	5	0	1	0
Coshocton	12	13	17	8	6	20	24	14	21	20	6	2	1
Guernsey	2	1	0	0	0	0	1	1	2	2	6	4	4
Harrison	1	0	0	0	0	0	0	0	0	0	5	3	3
Hocking	1	0	0	4	0	0	0	0	0	0	2	2	2
Holmes	1	0	0	0	0	1	2	3	0	0	3	3	3
Jackson	1	0	4	4	0	1	1	0	0	0	1	0	1
Jefferson	7	3	8	11	7	9	12	7	4	9	6	7	6
Mahoning	0	0	0	0	0	1	1	0	0	0	0	0	0
Muskingum	43	35	35	35	43	45	45	50	50	50	48	45	37
Noble	44	40	39	39	50	50	50	44	44	44	47	45	36
Perry	1	1	1	0	0	0	5	0	0	0	2	0	0
Stark	2	0	0	0	1	0	2	5	5	5	2	2	2
Tuscarawas	4	1	1	1	1	1	1	11	8	5	7	5	5
Vinton	8	0	0	0	8	6	6	12	12	12	18	13	8
Washington	2	4	4	4	3	3	3	0	0	0	0	0	0
TOTAL	161	117	133	126	145	167	178	186	183	171	204	176	146

<sup>1</sup>Reflects employment as reported. Only those employees hired by the operator to perform reclamation work were included. Reclamation personnel hired by other, nonmining agencies were not included.<sup>2</sup>For those operations reporting activity in more than one county, employment was evenly split (to the nearest whole employee) between the counties involved unless a by-county breakdown was provided by the operator.



TABLE 15.—1983 Wage and salary payments to Ohio coal-mine employees, by county and occupational group

County <sup>1</sup>	Wage and salary payments (nearest whole dollar) <sup>2</sup>								
	All occupations	Supervisory, technical, and clerical	Tonnage employees	Underground production employees	Surface production employees	Strip miners	Auger miners	Reclamation	Central preparation plant, central shop, etc.
Athens	\$43,633					\$43,633			
Belmont	49,001,544	8,442,047	5,230,922	8,682,413	1,189,719	18,022,809	28,238	713,515	6,691,881
Carroll	1,016,430	98,854				912,294		5,282	
Columbiana	4,526,967	654,264				3,149,683		80,568	642,452
Coshocton	9,456,840	1,481,918				7,747,141		105,080	122,701
Gallia	2,465,657	475,563				1,867,028			123,066
Guernsey	1,673,368	144,878				1,415,150	59,894	33,751	19,695
Harrison	33,491,200	7,078,792	5,429,979	8,387,668	838,161	5,016,277	8,524	40,886	6,690,913
Hocking	1,648,990	286,307				1,255,473		23,721	83,489
Holmes	758,892	130,697				607,770		20,425	
Jackson	2,265,010	411,017		212,549	20,569	1,115,616		10,400	494,859
Jefferson	10,886,764	1,640,535				7,525,628	48,577	253,584	1,418,440
Lawrence	2,626,112	561,620				1,874,433			190,059
Mahoning	1,381,855	156,111				929,702	40,363	1,143	254,536
Meigs	41,709,372	8,776,726	8,368,515	17,256,752					7,307,379
Monroe	31,239,661	10,947,814		15,068,548	2,567,794				2,655,505
Muskingum	19,514,219	3,213,439				14,365,062		1,124,941	810,777
Noble	18,092,483	3,092,604				13,115,008	4,217	1,141,327	739,327
Perry	15,257,774	3,751,892	3,503,963	4,594,764		1,849,386		8,669	1,549,100
Scioto	345,715	42,540							303,175
Stark	2,678,076	578,553				1,978,088		16,664	104,771
Tuscarawas	6,554,259	1,303,405				5,095,843	69,967	85,044	
Vinton	16,266,777	3,283,955		7,367,434		2,958,220		127,745	2,529,423
Washington	423,599	133,080				266,308		24,211	
Wayne	143,460					87,860			55,600
TOTAL	\$273,468,657	\$56,686,611	\$22,533,379	\$61,570,128	\$4,616,243	\$91,198,412	\$259,780	\$3,816,956	\$32,787,148

<sup>1</sup>For those operations reporting activity in more than one county, wage and salary payments were evenly split between the counties involved unless a by-county breakdown was provided by the operator.

<sup>2</sup>For those operations reporting only a total wage and salary payment to all workers, an equal pay rate was assumed for all employees. In cases where quarterly employment was reported but wage and salary payments were not, wage and salary payments for that quarter were estimated from reported payments in the other quarters to arrive at the annual figure.

### AGGREGATE IN OHIO'S CHANGING ECONOMY

by

Robert A. Wilkinson

Managing Director, Ohio Aggregates Association

Demand for mineral aggregates in Ohio reached a 20-year low in 1983. It was the fourth consecutive year in which production was lower than the previous year. After producing 100 million tons of crushed stone, gravel, and sand in 1979, production fell to 60 million tons in 1983. This was one-third less than the 90-million-ton average yearly production since 1963.

1984 is projected as the year that aggregate production starts an upward trend. A 3 to 4 percent yearly increase is seen for the next few years, resulting in about 75 million tons of aggregate being produced annually by the late 1980's. Most industry leaders do not foresee a return to the 90-million-ton years in the near future.

The recent recession is not the only factor affecting aggregate demand. Change of emphasis in a number of areas has also had its effect.

Perhaps highway expenditures best demonstrate this change. With most major highway and road systems having been built, the need now is to maintain and upgrade existing roads, bridges, and streets. The demand for large quantities of aggregate base and subbase material is gone. Most highway dollars now go to resurfacing pavements and bridge-repair projects.

Changes in the housing market also affect the demand for aggregate. As Ohio's population levels off, the demand for new subdivisions and new housing slows down. The shift to multiple-family dwellings and a trend towards rebuilding

and upgrading houses in the inner city reduces the need for new streets and water and sewer service.

Ohio's reduced steel production has had an effect on the demand for flux stone. Volumes in this area have decreased 40 percent over the past 10 years. The advent of "mini" steel mills will probably cause a continuation of this trend.

As a result of these and other factors, there is an excess of production capacity in Ohio's aggregate industry, making aggregate pricing very competitive. Aggregate producers are finding it very difficult to cover production cost, provide for equipment maintenance and replacement, plus make a profit.

There is also a change in aggregate demand in relation to size. With the emphasis on resurfacing roads and streets, there is a need for more No. 8 (AASHTO-M43)-size material. For most aggregate producers to increase the percentage of No. 8 material they make, they need to either modify their plants or recirculate some of the larger size material back through the plant. The end result is a higher unit cost for No. 8 material plus an oversupply of finer material.

There are opportunities for the aggregate producer in the 1980's. At this time aggregate base has a very definite cost advantage compared to bituminous or portland-cement concrete bases for street widening and parking areas. Limestone and dolomite will play a part in the utilization of Ohio's high-sulfur coal. Either lime or limestone is normally

used in removing the sulfur dioxide from flue gas. When the fluidized-bed principle is used in coal-fired boilers, both limestone and dolomite have proven to be effective absorbents.

There is also an opportunity to increase the use of agricultural limestone. National studies indicate that Ohio farms should be using about 5 million tons of aglime per year to get maximum crop yields. This is about 3 times the volume of aglime currently being used. In addition, there will be an increased need for aglime as farmers apply conservation-tillage practices.

Finally, as Ohio communities begin to rebuild and rehabilitate their infrastructure, there will be a need for aggregate for bedding water and sewer lines, repairing streets, and for

use in bituminous and portland-cement concrete.

Ohio's aggregate industry continues to go through an adjustment period. Producers are becoming more efficient in their operations and employees are more productive. Production capacity will gradually be reduced as some old plants are taken out of service and deposits are depleted. Prices will increase to better reflect a reasonable return on the producers' investment.

Aggregate demand may not again reach the volumes of the 1970's, but a basic need for aggregate remains and there are opportunities for growth in Ohio's changing economy. Aggregate can help the Ohio farmer to increase his crop yields, the Ohio coal miner to burn his coal, and Ohio communities to rebuild their infrastructure.

## INDUSTRIAL MINERALS

Industrial minerals, other than mineral fuels, were produced in a total of 84 Ohio counties in 1983. The combined value of all nonfuel industrial minerals sold<sup>4</sup> in 1983 was \$218,157,924.

The total average annual employment reported in 1983 for production of industrial minerals was 3,055 employees. There were 463 operations producing industrial minerals, 30 of which produced more than one mineral commodity. These multiple-commodity operations employed 212 people. Seven operations employed 19 people to produce clay and shale; six operations employed 52 people to produce limestone and sand and gravel; five operations employed 51 people to produce limestone and shale; five operations employed 46 people to produce limestone and clay; two operations employed 11 people to produce limestone, clay, and shale; one operation employed 21 people to produce limestone, sandstone, clay, and shale; one operation employed seven people to produce sandstone and sand and gravel; one operation employed three people to produce limestone, sand and gravel, and clay; one operation employed two people to produce sandstone, clay, and shale;

and one operation producing sandstone and shale employed one person for less than half time. These employees worked an average of 165 days and earned an average annual wage of \$19,753. Total wages reported for those employees producing multiple commodities were \$4,187,665.

The total reported wages for all employees producing industrial minerals in 1983 were \$59,865,968. The average annual wage, based on those employees for whom wages were reported, was \$19,712.

TABLE 16.—1983 Value of Ohio industrial minerals

Commodity	Value	Percent of total
Limestone and dolomite	\$103,435,911	47.4
Sand and gravel	68,433,424	31.4
Salt	19,705,486	9.0
Sandstone and conglomerate	18,683,030	8.6
Shale	1,661,848	0.8
Clay	4,284,108	2.0
Gypsum	1,871,210	0.8
Peat	82,907	<0.1
<b>TOTAL</b>	<b>\$218,157,924</b>	<b>100.0</b>

<sup>4</sup>See Foreword, p. iii, for discussion of use of sales figures vs. production figures.

TABLE 17.—1983 Employment at Ohio industrial mineral operations, by county and commodity

County <sup>1</sup>	Number of employees <sup>2</sup>									
	Total	Limestone and dolomite	Sand and gravel	Sandstone and conglomerate	Clay	Shale	Salt	Gypsum	Peat	Multiple commodities
Adams	49	49								
Allen	42	38	4							
Ashland	10		9			1				
Ashtabula	3		3							
Athens	15	14	1							
Auglaize	26	17	8		1					
Belmont	37	14	23							
Brown	1	1								
Butler	67		67							
Carroll	17	11	3	3						
Champaign	13		13							
Clark	26	3	23							
Clermont	9		9							
Clinton	18	18								
Columbiana	15		4	1	1	2				7
Coshocton	25		10	14						1
Crawford	32	32	<sup>3</sup>							
Cuyahoga	184		1		3		180			
Darke	23	9	3							11
Defiance	1		1							



TABLE 17.—1983 Employment at Ohio industrial mineral operations, by county and commodity—Continued

County <sup>1</sup>	Number of employees <sup>2</sup>									
	Total	Limestone and dolomite	Sand and gravel	Sandstone and conglomerate	Clay	Shale	Salt	Gypsum	Peat	Multiple commodities
Delaware	23	23								
Erie	95	77	6	12						
Fayette	22	22								
Franklin	138	36	101			1				
Fulton	3		3							
Gallia	2		2							
Geauga	72			72						
Greene	32	9	21		2					
Hamilton	65		65							
Hancock	29	29								
Hardin	10	10								
Harrison	1					1				
Henry	4		4			3				
Highland	26	16								10
Hocking	19		13		3					3
Holmes	41	14	9	2	1	1				14
Huron	3		2	1						
Jackson	12			3	4					8
Knox	68		31	37						
Lake	91		2				89			
Lawrence	14	3	2			6				6
Licking	28		27			1				
Logan	46	19	8				2		17	
Lorain	36			36						
Lucas	59	33	10							16
Mahoning	53	42	3	1						10
Marion	39	33	4			2				3
Medina	33		30							
Meigs	6		6							
Mercer	22	22								
Miami	63	32	26							5
Monroe	44	6	38							
Montgomery	16	16								
Morgan	11	1	10							
Morrow	5		5							
Muskingum	106	56	14		2					34
Noble	14	14								
Ottawa	89	74						15		
Paulding	35	14								21
Perry	78	18		60						
Pickaway	16		16							
Pike	17	7	10							
Portage	81		81							
Preble	15	3	12							
Putnam	19	6			13					
Richland	25		25							
Ross	31		15	16						
Sandusky	79	79	3							
Scioto	15		9	5	1					
Seneca	53	53	3							
Shelby	28	10	10							8
Stark	69	9	37	4	1	3				22
Summit	28		26				2			
Trumbull	19		15	4						
Tuscarawas	90	4	17	7	19	19				28
Union	16	16								
Van Wert	18	18								
Vinton	4				4					
Warren	28		28							
Washington	18	1	17							
Wayne	39		24				15			
Williams	10		5							5
Wood	21	21								
Wyandot	157	144	11		1				1	
TOTAL	3,055	1,189	976	271	52	34	288	15	18	212

<sup>1</sup>For those operations reporting activity in more than one county, employment was evenly split (to the nearest whole employee) between the counties involved unless a by-county breakdown was provided by the operator.

<sup>2</sup>Reflects employment as reported. Employment is not included for mines which were owner operated.

<sup>3</sup>Averages fewer than one employee per month.

<sup>4</sup>Employment not reported by operators working in this county.

## 1983 OHIO MINERAL INDUSTRIES REPORT

TABLE 18.—1983 Ohio limestone and dolomite sales, by county and type

County	Tons sold											Unspecified/ other	
	Total, all types	Crushed and broken stone						Dimension stone	For portland cement manufacture	Agricultural stone (aglime)	Raw stone for burning		
		Total	Riprap	Metallurgical stone	Stone for portland cement concrete	Stone for bituminous concrete	Building, road base, resurfacing						Railroad ballast
Adams	1,373,479	1,349,226	9,243	77,919	25,000	21,000	1,149,827	40,905	25,332		24,253		
Allen	1,114,449	1,109,698	698		72,054	62,800	756,598	217,548			4,751		
Athens	427,655	427,655					427,655				4,060		
Auglaize	325,185	321,125	10,123				311,002						
Belmont	136,049	136,049	11,815				124,234						
Carroll	108,232	108,232	23,115				85,117						
Clark	102,619	102,619					102,619				29,980		
Clinton	235,200	205,220	15,270		15,000	24,000	150,950	130	140,602		76,977		
Crawford	705,511	628,534	30,074				457,728						
Darke	191,368	191,368					191,368						
Delaware	778,529	770,156	4,772		462,519	193,051	765,069	71	244	71,191	8,373	184,590	
Erie	2,614,540	2,295,143	30,663				1,576,772	32,138			134,807		
Fayette	262,987	191,796					191,796						
Franklin	1,766,307	1,766,307					1,766,307						
Greene	866,035	185,459					185,459						
Hancock	501,054	501,054	18,279		16,780	600	308,372	157,023			6,229	2,553	
Hardin	117,435	111,206	444		5,000	15,075	105,762				39,122		
Highland	545,865	504,190	9,097	48,035			431,983						
Holmes	257,527	257,527					257,527						
Jackson	436,824	436,824					436,824						
Lawrence	408	408	408										
Logan	304,189	225,363	10,562		35,500	32,917	146,384		14,971		53,900		
Lucas	1,516,179	1,473,099	13,115		156,894	63,138	1,224,981				26,247		
Mahoning	1,257,821	733,553					605,456	617	1,820				
Marion	455,673	429,426	2,389		16,141	50,991	357,468						
Mercer	243,017	216,946	1,100		481		215,164		201	3,201	26,071		
Miami	531,616	469,933	2,318	56,032	14,172	3,216	272,589	50,334	71,272		58,482		
Monroe	56,620	56,620					48,127		8,493				
Montgomery	436,569	413,781					413,781						
Morgan	15,343	15,343					15,343					455,500	
Muskingum	1,594,698	587,783	8,000				579,783						
Noble	233,708	233,708					233,708						
Ottawa	1,083,036	926,204	34,783		413,500	69,014	404,824		4,083		156,832		
Paulding	1,183,634	816,394	11,142	7,329	191,495	45,602	539,029		21,797		26,850		
Perry	208,701	208,701					208,701						
Pike	235,361	207,389	19,793		7,554		170,555	9,487			27,972		
Preble	31,487	29,914	1,588				28,326			1,573		27,478	
Putnam	157,521	130,043	398			5,000	129,645		310,329	296	1,886,352		
Sandusky	2,897,921	944,448	425,655	18,738	14,425		1,133,316			5,288	138,269		
Seneca	1,382,958	1,140,667	7,351								3,136		
Shelby	127,424	124,288	35,659				78,557	10,072			700		
Stark	419,617	309,511	179,492				130,019			7,373	109,406		
Tuscarawas	59,959	52,586	630				51,956						
Union	357,411	336,319	1,233		13,700	59,536	321,386						
Van Wert	421,701	377,067	31,314		71,351		133,118		81,748		21,092		
Washington	3,319	3,319					3,319						
Williams	14,828	9,292			155	177	1,214		7,746	5,427	89,481	5,533	
Wood	817,028	702,450	17,080		84,341	94,841	496,702	60,791	9,486		250,744	19,670	
Wyandot	2,147,238	1,627,087	7,723		161,232	123,048	725,105		549,188				
TOTAL	31,061,835	24,401,030	975,326	336,150	1,777,294	864,006	18,621,826	579,116	1,247,312	94,349	2,218,023	1,118,324	818,784



## LIMESTONE AND DOLOMITE

Limestone and dolomite were produced at 123 operations in 49 Ohio counties during 1983. Sales<sup>5</sup> of limestone and dolomite totalled 31,061,835 tons, with Sandusky, Erie, Wyandot, Franklin, and Muskingum Counties accounting for 35.5 percent of those sales. Reported known production totalled 25,579,358 tons.

Lime produced from Ohio limestone and dolomite totalled 1,228,282 tons in 1983 and came from six oper-

ations in Ottawa, Sandusky, Seneca, and Wyandot Counties.

The total value<sup>6</sup> of limestone and dolomite sold in 1983 was \$103,435,911, with an average price per ton of \$3.33.

An annual average of 1,189 employees earned a total of \$23,938,803 in wages. These employees worked an average of 154 days to collect an average annual wage of \$20,134.

Primary uses for crushed and broken limestone and dolomite were building, stone for portland cement concrete, and riprap. Other major uses for various forms of the stone included the manufacture of portland cement and aglime (a noncalcined product).

TABLE 19.—1983 Production of lime from Ohio stone, by county and type

County	Total tons	Building	Chemical and industrial	Refractory	Other
Ottawa	78,416	39,175	39,241		
Sandusky	970,969		828,218	48,025	94,726
Seneca	45,580			45,580	
Wyandot	133,317		133,317		
TOTAL	1,228,282 <sup>1</sup>	39,175	1,000,776	93,605	94,726

<sup>1</sup>Burning produced a 49.1 percent weight loss.

## SAND AND GRAVEL

Sand and gravel (excluding material dredged from Lake Erie or the Maumee River) were produced<sup>5</sup> or sold at 266 operations in 62 Ohio counties during 1983. Total sales of sand and gravel were 23,582,049 tons; sand sales totalled 11,523,020 tons and gravel sales totalled 12,059,029 tons. Franklin, Hamilton, Portage, Butler, and Stark Counties led in sales, accounting for 37.9 percent of the total. Reported known production of sand and gravel (excluding Lake Erie and Maumee River dredging production) totalled 10,532,670 tons in 1983.

A total of 259,720 tons of sand were dredged from Lake Erie, and 88,336 tons of sand and 66,221 tons of gravel were dredged from the Maumee River. Total sand and gravel production from Lake Erie and the Maumee River was 414,277 tons in 1983. Sales and employment figures were not available for Lake Erie or Maumee River dredging operations.

The value<sup>6</sup> of sand and gravel sold in 1983 totalled \$68,433,424, with an average price per ton of \$2.90. An annual average of 976 employees worked an average of 136 days for total reported wages of \$18,605,268. The average annual wage, based on those employees for whom wages were reported, was \$19,401.

Road construction and resurfacing, building, portland cement concrete, and bituminous concrete were the major uses for Ohio sand and gravel in 1983.

<sup>5</sup>See Foreword, p. iii, for discussion of use of sales figures vs. production figures.

<sup>6</sup>Includes reported and estimated values. See footnote 1, p. 3.

## 1983 OHIO MINERAL INDUSTRIES REPORT

TABLE 20.—1983 Ohio sand sales, by county and type

County	Tons sold							
	Total	Foundry	Portland cement concrete	Bituminous concrete	Building	Road construction, resurfacing	Filtration	Other/ unspecified
Allen	22,933		10,953			5,824	183	5,973
Ashland	87,147		27,024		14,521	40,023	669	4,910
Ashtabula	18,400				900			17,500
Athens	5,988							5,988
Auglaize	72,722		42,812		20,194			9,716
Belmont	308,078		283,687	24,391				
Butler	721,323		127,785	8,750	159,081	335,483		90,224
Carroll	28,359				427	22,875	909	4,148
Champaign	96,652				8,628	77,411		10,613
Clark	324,890		64,300	82,876	32,022	145,692		
Clermont	25,031					4,500		20,531
Columbiana	46,489		20,633	5,329	20,527			
Coshocton	113,694		8,033	12,533	46,258	46,870		
Crawford	340							340
Cuyahoga	42,240							42,240
Darke	28,166				5,969	6,697		15,500
Erie	25,602	13,651						11,951
Franklin	925,366		50,115	132,546	70,309	668,206	4,190	
Fulton	2,455					2,455		
Gallia	6,540	1,151						5,389
Greene	276,095		81,813	15,676	30,297	141,889	3,150	3,270
Hamilton	947,427			29,319	137,844	443,238		337,026
Henry	120,420				8,200	112,220		
Hocking	104,495		6,828	54,709	22,303	13,041	1,914	5,700
Holmes	38,529		10,392		248	25,799	420	1,670
Huron	41,176				919	36,122	3,498	637
Knox	108,451			2,897	13,850	38,614		53,090
Lake	22,234				21,746			488
Lawrence	43,189	862						42,327
Licking	202,486	19,896			28,075	118,615		35,900
Logan	71,769		36,850		12,197			22,722
Lucas	332,551				298,465	34,086		
Mahoning	2,899				2,899			
Marion	33,085				30,189	2,692		204
Medina	564,370		4,454	106,110	97,711	330,608	7,670	17,817
Meigs	158,735			126,862	21,087	10,786		
Miami	260,270		4,719		9,133	10,159	600	235,659
Montgomery	374,719		102,865	46,389	83,919	130,493		11,053
Morgan	63,265		8,041	5,959				49,265
Morrow	16,895				15,970	925		
Muskingum	188,743			141,469	47,274			
Pickaway	156,366							156,366
Pike	236,144		198,969	31,218	5,957			
Portage	1,132,555		245,603	206,890	214,732	170,816		294,514
Preble	34,230		8,826		11,867	13,537		
Richland	60,436	1,444	6,546	10,762	18,235	20,739		2,710
Ross	189,032		1,010	107,689	37,098	20,007		23,228
Sandusky	500							500
Scioto	262,027		75,000	182,317	554			4,156
Seneca	3,424							3,424
Shelby	101,983		13,000	8,500	46,610	300		33,573
Stark	504,450		105,464	102,966	182,526	89,174	1,690	22,630
Summit	299,745	6,540			146,807	110,325		36,073
Trumbull	259,485		36,997		20,756	197,754		3,978
Tuscarawas	308,367	364		8,642	147,558	44,765	1,490	105,548
Warren	428,692			44,526	23,561	102,071	16,755	241,779
Washington	130,195			86,654	29,805	13,644		92
Wayne	210,715		53,047	46,855	3,681			107,132
Williams	158,342		82,300		10,124	64,748	1,170	
Wyandot	172,114		60,943	43,887	36,371	1,800	911	28,202
TOTAL	11,523,020	43,908	1,779,009	1,676,721	2,197,404	3,655,003	45,219	2,125,756



TABLE 21.—1983 Ohio gravel sales, by county and type

County	Tons sold						
	Total	Building	Portland cement concrete	Bituminous concrete	Road construction, resurfacing	Filtration	Other/unspecified
Allen	11,160	6,929				1,336	2,895
Ashland	104,846	22,532			55,359	1,243	25,712
Ashtabula	14,601	900					13,701
Athens	3,736						3,736
Auglaize	65,887	13,352			33,886		18,649
Belmont	471,047		263,774	95,829	111,444		
Butler	982,225	246,566	43,139	11,350	622,517		58,653
Carroll	25,403				19,162		6,241
Champaign	184,411	45,058			111,396		27,957
Clark	581,247	106,712	107,755	102,570	198,827		65,383
Clermont	29,806						29,806
Columbiana	65,693	54,616	1,867	3,367	933	4,910	
Coshocton	94,143	19,648	8,733	5,333	60,429		
Crawford	340						340
Darke	19,404	8,700			10,321		383
Defiance	7,113				7,113		
Franklin	1,380,876	308,972	29,871	118,099	920,448	3,486	
Gallia	1,860				1,381		479
Greene	505,762	17,549	124,983	21,574	282,226	6,950	52,480
Hamilton	1,009,697	370,037		18,615	351,068	3,112	266,865
Highland	1,023				1,023		
Hocking	70,942	12,680	1,903	27,831	19,291	2,611	6,626
Holmes	95,865	7,469	6,557		57,144	18,684	6,011
Huron	8,283	3,091			5,192		
Knox	290,915	20,400	1,335		61,048		208,132
Lake	12,183	5,745	5,348				1,090
Licking	295,823	35,035			216,888		43,900
Logan	34,444				1,376		33,068
Mahoning	8,698	8,698					
Marion	15,839						15,839
Medina	251,191	142,458			108,733		
Meigs	149,106	45,058		74,440	29,418		190
Miami	429,866	25,793	5,616		12,034	1,400	385,023
Montgomery	641,029	200,581	103,545	57,750	180,795	4,461	93,897
Morgan	146,714		20,639	8,061	4,300		113,714
Morrow	52,429	16,063			32,341	2,391	1,634
Muskingum	74,014	22,979		49,635	1,400		
Pickaway	197,616						197,616
Pike	54,190	18,300	10,000	10,000	15,740	150	
Portage	658,888	164,551	49,000	151,751	158,340	4,371	130,875
Preble	86,156	40,974	7,720		37,462		
Richland	280,412	163,623		8,454	93,382	1,661	13,292
Ross	161,713	30,687	1,626	72,460	23,275	2,028	31,637
Scioto	59,335	1,000		33,151	1,500	3,265	20,419
Seneca	856						856
Shelby	118,973	46,827	13,000	8,500	1,781		48,865
Stark	664,025	91,880	150,148	83,969	309,506	2,259	26,263
Summit	162,114	121,524			28,806		11,784
Trumbull	54,717	13,787	6,610		25,775	4,786	3,759
Tuscarawas	332,970	54,706			166,761		111,503
Warren	675,541	106,160		43,852	175,566	25,132	324,831
Washington	108,794	16,233		46,837	45,724		
Wayne	229,859	49,447	34,808	58,000			87,604
Williams	46,026	33,147			6,348		6,531
Wyandot	29,223	7,509			1,000	6,893	13,821
TOTAL	12,059,029	2,727,976	997,977	1,111,428	4,608,459	101,129	2,512,060





TABLE 24.—1983 Ohio dimension-sandstone sales, by county and type

County	Tons sold									
	Total	Refractory	Rough construction	Rubble	Grindstone	Rough architectural	Finished	Curbing	Flagging	Other
Carroll	366						366			
Coshocton	9,928	1,144				8,784				
Erie	5,706			4,429			1,218	8	51	
Geauga	77,551	4,000	22,260			933				50,358
Holmes	19					19				
Jackson	359	359								
Knox	800					800				
Lorain	19,797			13,411	9		5,881	32	464	
Scioto	4,690		3,110						1,580	
Stark	4,050		4,050							
TOTAL	123,266	5,503	29,420	17,840	9	10,536	7,465	40	2,095	50,358

## CLAY

Clay was produced at 37 operations in 19 Ohio counties during 1983. Clay sales<sup>9</sup> (including material for captive use) totalled 958,461 tons, with Tuscarawas, Cuyahoga, Stark, Holmes, and Paulding Counties responsible for 82.1 percent of the total sales. The total value<sup>10</sup> of clay sold in 1983 was \$4,284,108, with an average price per ton of \$4.47. Reported known production of clay was 825,484 tons.

An annual average of 52 employees worked an average of 86 days to earn total wages of \$549,917 in 1983. The average annual wage, based on those employees for whom wages were reported, was \$10,783.

Clay mined in Ohio in 1983 was largely for captive use in the production of common clay products and lightweight aggregate and for cement manufacture.

<sup>9</sup>See Foreword, p. iii, for discussion of use of sales figures vs. production figures.

<sup>10</sup>Includes reported and estimated values. See footnote 1, p. 3.

TABLE 25.—1983 Ohio clay sales, by county and type

County	Tons sold							
	Total	Common clay products	Glazed ware	Vitrified products	Refractories	Cement manufacture	Lightweight aggregate	Other
Auglaize	3,941	3,941						
Columbiana	900	900						
Coshocton	12,347	12,347						
Cuyahoga	143,398						143,398	
Greene	34,175					34,175		
Hocking	11,687			11,687				
Holmes	93,289	88,986						4,303
Jackson	53,784	40,873			12,911			
Lawrence	4,079				4,079			
Medina	4,211	4,211						
Muskingum	13,927	2,679						11,248
Paulding	85,483					85,483		
Perry	2,270	2,270						
Putnam	4,550	4,550						
Scioto	5,301				5,301			
Stark	127,808	27,473	2,250		17,142	9,913		71,030
Tuscarawas	336,702	275,704		52,905	8,093			
Vinton	2,074				2,074			
Wyandot	18,535	18,535						
TOTAL	958,461	482,469	2,250	64,592	49,600	129,571	143,398	86,581

## SHALE

Shale was produced at 30 operations in 17 Ohio counties during 1983, with production and sales<sup>11</sup> both totalling 1,353,384 tons. Stark, Tuscarawas, Medina, Columbiana, and Marion Counties were responsible for 80.4 percent of the total production and sales. The total value<sup>12</sup> of shale sold (including material for captive use) was \$1,661,848, with an average price per ton of \$1.23.

An annual average of 34 employees worked an average of 114 days at an average annual wage of \$12,078, based on those employees for whom wages were reported. Total wages reported for 1983 were \$410,639.

Shale mined in Ohio in 1983 was largely for captive use in the production of common clay products, for cement manufacture, and in the manufacture of vitrified products.

TABLE 26.—1983 Ohio shale sales, by county and type

County	Tons sold					
	Total	Common clay products	Glazed ware	Vitrified products	Cement manufacture	Other
Ashland	413			413		
Columbiana	74,634	74,634				
Coshocton	2,118	2,118				
Franklin	24,610	9,110				15,500
Harrison	14,000			14,000		
Henry	225	225				
Hocking	13,609			13,609		
Holmes	41,090	41,090				
Lawrence	44,993				44,993	
Licking	31,476			31,476		
Lucas	6,885				6,885	
Mahoning	46,230				46,230	
Marion	49,327	49,327				
Medina	96,195	96,195				
Muskingum	39,186	3,194			35,992	
Stark	612,815		9,964			602,851
Tuscarawas	255,578	246,429		6,549		2,600
TOTAL	1,353,384	522,322	9,964	66,047	134,100	620,951

## GYPSUM

Ohio's gypsum production and sales<sup>11</sup> (including material for captive use) totalled 224,097 tons in 1983, with a reported value<sup>12</sup> of \$1,871,210. Average price per ton was \$8.35.

An annual average of 15 employees worked an average of 333 days, with an average annual wage of \$34,117. Total wages reported for 1983 were \$511,748.

## SALT

Ohio's salt production totalled 2,373,033 tons in 1983. Rock salt was produced from two underground mines, one each in Cuyahoga and Lake Counties, with a total production of 1,738,305 tons. The four Ohio brining operations, one each in Licking and Wayne Counties and two in Summit County, produced a total of 69,323 tons of salt in brine and

565,405 tons of evaporated salt. Total sales<sup>11</sup> of salt in 1983 amounted to 2,316,604 tons with a total value<sup>12</sup> of \$19,705,486. Average price per ton was \$8.51 in 1983.

The salt industry had an average of 288 employees working an average of 277 days and earning an average annual wage of \$24,024. Total reported wages for 1983 were \$6,918,915. The primary use for Ohio salt in 1983 was ice control.

## PEAT

Peat was produced at five operations in five Ohio counties during 1983. A total of 14,137 tons of peat (including material for captive use) was sold<sup>11</sup> in 1983, with a total value<sup>12</sup> of \$82,907. Average price per ton was \$5.86. Reported known production was 16,709 tons.

An annual average of 18 employees earned a total of \$72,377, with an average annual wage of \$4,021. Data were insufficient to calculate the average number of days peat was produced.

Peat produced in Ohio was used for mulch, topsoil mix, worm culture, and legume inoculation.

<sup>11</sup>See Foreword, p. iii, for discussion of use of sales figures vs. production figures.

<sup>12</sup>Includes reported and estimated values. See footnote 1, p. 3.



## OIL AND GAS: AN OHIO GROWTH INDUSTRY

by

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Much of Ohio's industrial history can be traced to the production of gas and oil beginning in the early 1860's. In fact, Ohio may have title to the first discovery of oil in the United States. In 1814, two men drilled for salt in southeast Ohio and found oil instead. Unfortunately for the pair of explorers, there was no commercial market for oil in early 19th-century Ohio.

Times have changed, however, and today the Ohio oil and gas industry plays a vital role in the state's economic development. In 1983, oil and gas production was a \$1.5 billion industry, employing over 10,000 people and adding millions of dollars to state and local coffers through tax revenues.

Ohio independents set record production levels last year by producing almost 15 million barrels of oil and 150.9 billion cubic feet of natural gas, enough to heat well over 1 million homes. Those production levels have continued a trend over the past 5 years which has seen Ohio's oil and gas production rise by 25 percent and 21 percent, respectively.

Despite an increase in production, the dollar value of oil has begun to level off while gas valuation is climbing steadily. Not only did the production of Ohio natural gas increase in

1983, but its dollar value was up \$100 million from the 1982 level, reaching a valuation of \$481,755,618.

Ohio oil was valued at \$421,365,448 in 1983, a drop of about \$30 million from the previous year, when prices soared to more than \$31 per barrel. Regardless, Ohio oil was worth 47 percent more in 1983 than it was 5 years ago.

The vast majority of Ohio oil goes into the refinement of some of the best oil-lubricant stock in the world. Ohio produces 65 percent of all Pennsylvania Grade Crude Oil, which accounts for about 35 percent of all lubricating oil marketed in the United States.

Almost all of Ohio's producers are true independents, making their livelihood from the production and sale of oil and gas from the wellhead. Unlike major producers—the integrated oil and gas industry—Ohio independent producers have no means of passing on production costs through other operations such as refining and marketing. These independents realize the risk involved in drilling for a successful well and securing the capital needed to sustain an operation. Despite this, Ohio oil and gas producers are continuing to play an important role in producing resources to help meet the growing energy needs of Ohio.

## 1983 OHIO OIL AND GAS ACTIVITY

*This information on oil and gas is modified from T. A. DeBrosse, 1984, Summary of Ohio oil and gas developments in 1983: Ohio Department of Natural Resources, Division of Oil and Gas*

A total of 6,260 drilling operations were reported in Ohio during 1983, surpassing the record set in 1981, when 5,585 drilling operations were reported. A larger than normal number of operations carried over from previous years contributed to this record. In comparing the 1983 list of the 10 most active counties with the 1982 list, we note that only two counties, Portage and Ashtabula, failed to reappear on the 1983 list.

Perry County, with a reported total of 455 new well completions, was the most active county in 1983. Perry County was ranked ninth in 1982 with only 196 reported new well completions. The reported new well completions in Perry County in 1983 consisted of 54 gas wells, 83 oil wells, 294 combination wells, and 24 dry holes. Wells drilled to the "Clinton" sandstone accounted for 430 (94.5 percent) of the total wells drilled.

Muskingum County, with a total of 406 reported new well completions, was the second most active county in 1983. All but 18 of the wells reported were completed in the "Clinton" sandstone. Muskingum County was in third place in 1982.

Third-ranked Wayne County, with 316 reported new well completions, dropped from first place in 1982. Fourth-ranked Coshocton County, with 310 reported new well completions, rose from fifth place in 1982, and fifth-ranked Washington County, with 297 reported new well completions, dropped from second place in 1982.

Morgan County, with 284 reported new well completions, was ranked sixth in 1983. Trumbull County, with 269 reported new well completions, and Licking County, with 246 reported new well completions, were ranked seventh and eighth, respectively, in 1983. Neither of these counties appeared on the 1982 list of 10 most active counties. To round out the 1983 top-10 list, Holmes County ranked ninth

with 244 reported new well completions, and Medina County ranked tenth with 234 reported new well completions.

The total number of new wells drilled for oil and gas production in 1983 was 6,165, of which 5,736 (93.04 percent) were productive and 429 were dry holes. The productive wells consisted of 1,601 gas wells, 471 oil wells, and 3,664 combination wells. A total of 233 new wells drilled were classified as exploratory wells. The total new-well footage drilled in 1983 was 21,796,978 feet, compared to a total of 16,131,230 feet in 1982. The average depth per new well drilled for oil and gas was 3,536, an increase of 88 feet per well compared to the 1982 average. New "Clinton" wells averaged 4,015 feet in depth.

Total reported oil production in Ohio for 1983 was 14,971,072 barrels. This figure reflects an increase of 400,555 barrels, or 2.74 percent, compared to 1982 production. The dollar value of the crude oil produced in Ohio in 1983 was \$421,365,448.00, which is \$29,139,862.00 less than the value of 1982 production. The average price paid per barrel was \$28.15, a decrease of \$2.77 per barrel from the 1982 price.

Natural gas production in Ohio during 1983 was 151,299,859 MCF. This figure includes an estimated 2,203,396 MCF of gas utilized on the lease. In comparing the total volume of natural gas produced in Ohio in 1983 with the 1982 total, we note an increase of 12,909,219 MCF, or 9.32 percent. The dollar value of the natural gas produced in Ohio in 1983 was \$482,770,909.00. The value of the estimated volume of gas utilized on the lease was not used in computing this value. The dollar value of 1983 gas production was \$112,654,263.00 more than the value of 1982 production. The average price paid per MCF was \$3.191, an increase of \$0.517 per MCF from the 1982 price.

## 1983 OHIO MINERAL INDUSTRIES REPORT

TABLE 27.—1983 Ohio summary of new oil and gas well drilling by county

County <sup>1</sup>	Gas wells			Oil wells			Combination wells			Total producing wells			Dry holes		Total wells	Total footage	Percent productive
	No.	MCFGPD <sup>2</sup>	Footage	No.	Footage	BOPD <sup>3</sup>	No.	MCFGPD <sup>2</sup>	Footage	No.	BOPD <sup>3</sup>	Footage	No.	Footage			
Allen	4	155	11,449	23	17,425	43	13	350	14,228	40	88	131	3	3,975	3	3,975	00.00
Ashtabula	48	21,593	158,413	2	6,945	18	158	40,192	602,238	208	272	43,102	17	14,746	57	57,848	70.17
Athens	50	5,141	144,513	12	2,573	57	35	1,519	75,840	97	215	879	16	35,068	214	791,271	97.19
Auglaize	1	1	1,412									0			113	276,994	85.84
Belmont	7	3,625	20,351	1	3,950	5	6	44	13,901	14	14	19	3	6,357	17	44,559	82.35
Carroll	3	301	13,262	8	45,099	164	25	829	138,785	36	652	816	8	19,061	44	216,207	81.81
Canton	7	1,728	35,732	1	5,527	1	46	10,738	261,684	54	189	190	2	3,603	56	3,603	00.00
Columbiana	35	3,564	133,944	68	222,016	624	184	28,730	670,388	287	1,290	1,914	23	83,917	310	1,110,265	96.42
Coshocton	4	248	14,302				24	2,591	69,981	28	141	84,283	1	1,000	29	85,283	96.55
Cuyahoga	6	2,555	19,809				6	3	2,555	1	6	19,809	3	7,185	9	26,994	66.66
Delaware	4	1,648	13,265				1	1	1,648	32	162	184	4	9,718	2	26,994	50.00
Erie	9	1,663	23,265	5	13,779	22	18	1,243	48,383	32	2,906	85,427	1	400	36	95,145	88.88
Franklin	15	982	29,877	1	1,855	5	62	1,870	109,206	78	268	273	9	20,892	87	161,830	89.65
Gallia	14	2,829	57,063				126	23,191	508,359	140	717	566,422	1	6,599	141	573,021	99.29
Greene	1	1	1,620				35	3,202	184,851	1	1	1,620	1	1,680	2	3,300	50.00
Guernsey	107	12,784	618,273	5	25,792	84	35	3,202	184,851	147	15,986	307	13	67,656	160	896,572	91.87
Hancock	2	150	2,290	2	1,318	2	23	625	137,147	3	223	3,608	7	7,616	7	11,224	42.85
Harrison	22	3,981	129,578	1	5,850	40	23	625	137,147	46	95	272,575	7	28,587	53	301,162	86.79
Henry	1	30	1,630				4	200	6,554	5	40	230	5	27,584	10	16,768	50.00
Hocking	16	485	48,529	16	47,232	155	82	6,158	243,812	114	786	6,643	9	339,573	123	369,970	92.68
Holmes	34	6,891	132,809	11	33,482	205	189	24,888	691,548	234	1,732	857,839	10	30,783	247	888,622	95.90
Huron	1	1	960				1	25	970	2	2	1,930	5	8,213	7	1,143	28.57
Jackson	17	111	23,949				3	1,027	14,346	17	15	111	5	14,292	22	38,241	77.27
Jefferson	24	760	4,844	1	1,203	15	3	1,027	14,346	5	15	30	5	20,493	22	20,493	100.00
Knox	2	2,939	5,038	27	62,114	125	88	5,860	259,425	139	1,297	1,422	30	78,738	169	450,316	82.24
Lake	62	13,846	188,730	1	3,091	10	10	1,403	31,449	73	27	37	3	8,992	76	223,270	96.05
Lawrence	32	5,674	93,317				1	1,403	31,449	32	27	0	22	4,912	34	98,229	94.11
Licking	24	2,149	51,541	367	141,575	119	119	8,727	333,532	224	1,176	1,543	22	27,880	246	554,528	91.05
Lorain	59	1,772	18,546	2	10,812	15	5	1,140	13,953	151	15	15	5	7,782	19	40,281	73.68
Madison	32	9,500	100,732	13	9,283	54	174	14,888	469,818	219	1,108	1,134	22	26,023	156	825,823	96.79
Medina	79	3,216	226,952	3	4,662	13	89	1,070	609,929	171	1,412	1,466	15	36,032	234	755,976	93.58
Mercer	2	21	2,412				2	4,286	96,586	2	171	210	3	3,059	174	328,200	98.27
Monroe	58	189,251	189,251	5	20,831	261	100	7,055	321,434	167	472	21	1	2,893	3	5,305	66.66
Morgan	66	15,744	403,041	9	8,219	183	183	26,008	596,065	271	1,662	733	6	15,516	173	555,032	96.53
Morrow	1	25	3,440	4	13,218	2	2	220	6,898	7	228	1,728	13	49,129	284	1,059,054	95.42
Muskingum	89	25,113	355,082	32	99,670	398	262	26,549	1,042,601	383	1,902	360	17	54,614	24	78,170	29.16
Noble	103	15,917	491,290	7	6,494	32	83	5,919	256,118	193	10	463	23	83,158	406	1,580,511	94.33
Odessa	1	1	1,499	1	1,439	2	3	17	5,266	5	18	12	8	10,812	201	780,271	96.01
Paidung	54	5,053	183,400	83	249,367	617	294	15,095	940,118	431	2,323	2,940	6	11,059	8	13,937	45.45
Perry	4	8	3,284				4	8	764,475	4	8	0	24	72,410	455	1,445,295	94.72
Pike	4	4,478	31,531	6	27,683	201	170	24,679	764,475	184	1,394	0	8	35,909	4	3,284	100.00
Portage	24	43	20,488				3	51	5,576	24	24	0	3	6,786	192	859,698	95.83
Seneca	3	1,020	3,927	1	1,285	1	3	51	5,576	3	47	5,576	3	6,786	24	20,488	100.00
Shelby	11	795	52,814	9	46,299	101	160	7,500	792,598	190	359	2	6	2,542	6	12,362	83.33
Stark	14	1,701	53,576	1	3,978	175	175	32,988	670,569	269	1,103	3,460	5	25,427	185	917,128	97.49
Summit	119	74,207	560,607	4	18,843	95	136	50,085	607,404	269	817	1,103	3	11,521	193	739,644	98.29
Tuscarawas	44	5,505	221,047	2	2,568	11	8	368	507,878	144	154	912	10	43,669	269	1,186,854	97.28
Van Wert	12	1,255	15,835				2	1	10,377	22	162	564	3	20,823	147	749,548	97.95
Vinton	33	5,120	75,910	3	3,716	27	9	160	10,377	45	59	162	12	17,905	34	46,705	64.70
Washington	153	9,795	463,168	12	18,740	96	123	10,848	322,406	288	86	86	11	30,751	56	126,077	80.35
Wayne	57	11,704	209,283	9	30,575	134	239	32,912	818,843	305	1,152	1,286	1	37,239	297	816,380	96.96
Wood	1	40	1,210				1	5	1,400	1	4	70	2	3,060	316	1,095,940	96.51
Wyandot	1,601	322,133	6,039,743	471	1,237,528	4,211	3,664	451,260	13,301,503	5,736	29,247	33,458	1	3,149	2	4,549	50.00
TOTAL													429	1,218,204	6,165	21,796,978	93.04

<sup>1</sup>The following counties reported no wells drilled in 1983: Adams, Brown, Butler, Champaign, Clark, Clermont, Crawford, Darke, Defiance, Fayette, Fulton, Hamilton, Hardin, Highland, Logan, Lucas, Madison, Miami, Montgomery, Pickaway, Preble, Putnam, Richland, Ross, Sandusky, Union, Warren, and Williams.

<sup>2</sup>MCFGPD, thousand cubic feet of gas per day; BOPD, barrels of oil per day.



TABLE 28.—1983 Ohio summary of new oil and gas well drilling by producing zone

Producing zone	No. of producing wells	No. of dry holes	Total no. of wells	Total footage	Percent productive
Pennsylvanian undifferentiated	25	14	39	29,575	64.10
Upper Mississippian undifferentiated	13	2	15	25,122	86.66
Lower Mississippian "1st & 2nd Berea"	720	80	800	1,148,853	90.00
Devonian					
Ohio Shale	501	32	533	1,661,526	93.99
Sylvania	2	0	2	1,930	100.00
Oriskany	13	2	15	52,536	86.66
Silurian					
"Newburg"	7	4	11	24,307	63.63
"Clinton-Medina"	4,381	213	4,594	18,444,048	95.36
Lower Ordovician					
Trenton-Rose Run	65	37	102	232,537	63.72
Cambrian undifferentiated	9	42	51	161,231	17.64
Precambrian	0	3	3	15,313	00.00
TOTAL	5,736	429	6,165	21,796,978	93.04

TABLE 29.—Ohio new well completions<sup>1</sup>, 1973-1983

Year	Gas wells		Oil wells		Combination wells		Dry holes		Total wells
	No.	Percent	No.	Percent	No.	Percent	No.	Percent	
1973	759	50.53	145	9.65	432	28.76	166	11.05	1,502
1974	768	43.49	247	13.99	584	33.07	167	9.46	1,766
1975	417	34.18	208	17.05	480	39.34	115	9.43	1,220
1976	816	42.14	213	11.00	743	38.37	164	8.47	1,936
1977	844	32.16	372	14.18	1,237	47.14	171	6.52	2,624
1978	844	32.39	273	10.47	1,273	48.85	216	8.29	2,606
1979	1,097	31.86	251	7.29	1,927	55.97	168	4.88	3,443
1980	818	24.37	276	8.22	2,154	64.18	108	3.22	3,356
1981	1,256	23.15	394	7.26	3,419	63.02	356	6.56	5,425
1982	1,095	23.59	317	6.83	2,901	62.49	329	7.09	4,642
1983	1,601	25.96	471	7.63	3,664	59.43	429	6.95	6,165

<sup>1</sup>Does not include wells reopened, gas-storage wells, or secondary-recovery or service wells.

TABLE 30.—Ohio crude oil and gas production and reserves, 1973-1983

Year	Oil		Gas	
	Production (thousand barrels)	Reserves <sup>1</sup> (thousand barrels)	Production (thousand MCF)	Reserves (thousand MCF) (exclusive of storage)
1973	8,796	124,911	94,121	808,641
1974	9,088	123,871	94,376	960,662
1975	9,578	121,263	85,810	969,020
1976	9,994	125,268	89,770	1,025,950
1977	10,359	129,148	99,656	1,093,150
1978	11,154	131,194	115,239	1,177,511
1979	11,953	137,718	124,665	1,313,333
1980	12,928	116,000 <sup>2</sup>	138,856	1,436,629
1981	13,551	112,000 <sup>2</sup>	141,134	1,689,745
1982	14,571	111,000 <sup>2</sup>	138,391	1,730,691
1983	14,971	<sup>2</sup>	151,300 <sup>3</sup>	1,557,708

<sup>1</sup>Based on data from American Petroleum Institute.<sup>2</sup>Based on data from U.S. Department of Energy, Energy Information Administration. 1983 figure not available.<sup>3</sup>Included in this total is an estimated 2,203,396 MCF of gas utilized in the field.

TABLE 31.—1983 Ohio mineral-producing counties<sup>1</sup> and their Division of Mines abbreviations<sup>2</sup>

<i>County</i>	<i>Abbreviation</i>	<i>County</i>	<i>Abbreviation</i>	<i>County</i>	<i>Abbreviation</i>
Adams	Ads	Hamilton	Hmn	Ottawa	Oa
Allen	An	Hancock	Hk	Paulding	Pg
Ashland	Ald	Hardin	Hdn	Perry	Py
Ashtabula	Asa	Harrison	Hn	Pickaway	Pky
Athens	As	Henry	Hy	Pike	Pke
Auglaize	Ae	Highland	Hd	Portage	Pe
Belmont	Bt	Hocking	Hg	Preble	Pre
Brown	Bn	Holmes	Hs	Putnam	Pm
Butler	Br	Huron	Hrn	Richland	Rd
Carroll	Cl	Jackson	Jkn	Ross	Rs
Champaign	Cpn	Jefferson	Jfn	Sandusky	Sy
Clark	Ck	Knox	Kx	Scioto	So
Clermont	Ct	Lake	Lke	Seneca	Sa
Clinton	Cln	Lawrence	Le	Shelby	Shy
Columbiana	Ca	Licking	Lg	Stark	Sk
Coshocton	Cn	Logan	Lgn	Summit	St
Crawford	Cd	Lorain	Ln	Trumbull	Tl
Cuyahoga	Cya	Lucas	Ls	Tuscarawas	Ts
Darke	Dke	Mahoning	Mg	Union	Un
Defiance	De	Marion	Mn	Van Wert	Vt
Delaware	Del	Medina	Ma	Vinton	Vn
Erie	Ee	Meigs	Ms	Warren	Wan
Fairfield	Fd	Mercer	Mr	Washington	Wn
Fayette	Fe	Miami	Mi	Wayne	We
Franklin	Fn	Monroe	Me	Williams	Ws
Fulton	Ftn	Montgomery	My	Wood	Wd
Gallia	Ga	Morgan	Mon	Wyandot	Wt
Geauga	Gea	Morrow	Mw		
Greene	Ge	Muskingum	Mum		
Guernsey	Gy	Noble	Ne		

<sup>1</sup>Madison County produced no mineral commodities during 1983.<sup>2</sup>As used for Division of Mines mine numbers.



## 1983 OHIO ALPHABETICAL DIRECTORY OF REPORTING PRODUCING COAL-MINE OPERATORS—Continued

Name and address of operator	Name of mine	County	1983 production (tons)	State mine number
Valley Mining, Inc. R.D. 1 Box 158B Dennison, OH 44621	Strip No. 1 Strip No. 1 Valley Mining	Jefferson Tuscarawas Tuscarawas	212,399 8,642 71,640	Jfn-785 Ts-1923 Ts-1933
Varkony Mining Co. R.D. 5 Cadiz, OH 43907	Myers Strip	Harrison	6,662	Hn-701
W B Coal Co. P.O. Box 516 Steubenville, OH 43952	Ann Strip #1 Ann Strip #2	Harrison Jefferson	65,596 13,450	Hn-694 Jfn-762
Walton Coal Co. 1500 Mulga Rd. Wellston, OH 45692	Walton Pit	Jackson	17,890	Jkn-558
Waterloo Coal Co. P.O. Box 177 Oak Hill, OH 45656	Bowman Strip Royal Oak	Jackson Jackson	406,995 47,167	Jkn-367 Jkn-530 <sup>11</sup>
Weirton Construction Co. 401 Pennsylvania Ave. Weirton, WV 26062	#19 Pit	Jefferson	159,067	Jfn-687
Wells Mining Co. P.O. Box 1825 South Zanesville, OH 43701	Carson #1 Pit Wells Mining Co.	Perry Muskingum	13,090 20,231	Py-288 Mum-242
Wills Creek Energy Co. P.O. Box 663 Cambridge, OH 43725	Gress Mine Courtright Mine Poland Mine Bluck Mine Ungurean Mine Miller Mine	Coshocton Coshocton Coshocton Coshocton Coshocton Perry	52,150 60,739 25,335 14,785 17,454 77,591	Cn-741 Cn-768 Cn-779 Cn-795 Cn-800 Py-WC <sup>12</sup>
Wilmot Mining Co. P.O. Box 185 Wilmot, OH 44689	North	Stark	37,676	Sk-180
Youghioghenny & Ohio Coal Co. P.O. Box 1000 St. Clairsville, OH 43950	Nelms #2	Harrison	866,341	Hn-169
Zimnox Coal Co. 1211 Third St. Brilliant, OH 43913	Zimnox #4	Jefferson	60,296	Jfn-703
Zoar Mining Co. P.O. Box 550 Zoar, OH 44697	Zoar	Tuscarawas	7,350	Ts-540

<sup>11</sup>Operated 1st and 2nd quarters by Cardinal Coal Co.<sup>12</sup>No mine number has been assigned by the Division of Mines.

## 1983 OHIO DIRECTORY OF REPORTING COAL-WASHING PLANTS, BY COUNTY

County	Name and address of operator	Name of plant	Township
Belmont	Cravat Coal Co. 40580 Cadiz-Piedmont Rd. Cadiz, OH 43907	Lynn Tipple	Washington
	Marietta Coal Co. Friends Church Rd. St. Clairsville, OH 43950	Marietta Coal Co.	Pultney
	Nacco Mining Co. 12800 Shaker Blvd. Cleveland, OH 44120	Powhatan #6	Washington
	North American Coal Corp. 12800 Shaker Blvd. Cleveland, OH 44120	Powhatan #5	York
	R & F Coal Co. North Main St. Ext. Cadiz, OH 43907	Lamira Prep Plant	Smith
	Saginaw Mining Co. P.O. Box 6508 Cleveland, OH 44101	Saginaw Mine	Richland
Columbiana	C & E Inc. R.D. 2 Box 177 Toronto, OH 43964	C & E Inc.	Madison
	C & W Mining Co., Inc. 11478 State Rte. 45 Lisbon, OH 44432	C & W Prep Plant	Elkrun
	Industrial Mining Co. P.O. Box 1 Lisbon, OH 44432	Kensington Prep Plant	West
Gallia	Crown City Mining Co. 6422 East Main St. Reynoldsburg, OH 43068	Crown City Mine	Guyan
Harrison	Consolidation Coal Co. 101 Plaza East Blvd. Evansville, IN 47715	Georgetown Prep #019	Cadiz
Jackson	Milton Mining Co. P.O. Box 548 Jackson, OH 45640	Greasy #1 Mine	Milton
	Stewart Coal Co. Lake Alma Rd. Wellston, OH 45692	Cleaning Plant	City of Wellston
	Waterloo Coal Co. P.O. Box 177 Oak Hill, OH 45656	Waterloo Plant	Madison
	Ohio Coal & Construction Corp. P.O. Box 2388 Wintersville, OH 43952	#40 Dock/Shop/Washer	Warren
Jefferson	Route Forty-Three Washer P.O. Box 407 Richmond, OH 43944	Route Forty-Three Washer	Springfield
	W B Coal Co. P.O. Box 516 Steubenville, OH 43952	Ann Tipple	Wayne
	East Fairfield Coal Co. P.O. Box 217 North Lima, OH 44452-0217	Washing Plant	Beaver
Meigs	Southern Ohio Coal Co. P.O. Box 490 Athens, OH 45701	Meigs Mine #1	Salem
Monroe	Quarto Mining Co. 12800 Shaker Blvd. Cleveland, OH 44120	Powhatan #4 Powhatan #7	Salem Salem
	Central Ohio Coal Co. P.O. Box 98 Cumberland, OH 43732	Muskingum Mine	Meigs (Muskingum Co.) & Brookfield (Noble Co.)



**1983 OHIO DIRECTORY OF REPORTING COAL-WASHING PLANTS, BY COUNTY—Continued**

County	Name and address of operator	Name of plant	Township
Perry	Peabody Coal Co. 1951 Barrett Court Henderson, KY 42420	Sunnyhill Prep Plant #0297	Pike
Stark	Burrow's Mining, Inc. 4838 Central Ave. SE Canton, OH 44707-1199	Suzie Mine	Canton
	K & R Enterprises, Inc. P.O. Box 247 Canfield, OH 44406	Coal Preparation Co.	Paris
Tuscarawas	Central Fuel Co. P.O. Box 165 New Philadelphia, OH 44663	Stone Creek Mine	York
	Horizon Coal Co. P.O. Box 618 Beach City, OH 44608	Horizon Coal Wash Plant	Lawrence
Vinton	Sands Hill Coal Co. 1203 N. Pennsylvania Ave. Wellston, OH 45692	Sands Hill Strip	Clinton
	Southern Ohio Coal Co. P.O. Box 490 Athens, OH 45701	Raccoon Mine #3	Wilkesville
Wayne	Holmes Limestone Co. P.O. Box 295 Berlin, OH 44610	Holmes Wash Plant	Franklin

## 1983 OHIO DIRECTORY OF REPORTING PRODUCING COAL-MINE OPERATORS, BY COUNTY

NOTE: This directory lists only the coal-producing operations. It does not list tipples, loading docks, preparation plants, or other active, nonproducing operations that would contribute to employment and wage statistics presented on p. 10-13. Information shown is as reported by the operators.

## SEAM IDENTIFICATION

3	Lower Mercer	6	Middle Kittanning	8A	Pomeroy Redstone	11	Waynesburg
3A	Upper Mercer	7	Upper Freeport	8B	Fishpot	A	Anderson
4	Brookville	6A	Upper Freeport	9	Meigs Creek	H	Harlem
4A	Clarion	8	Pittsburgh	10	Uniontown	W	Wilgus
5	Lower Kittanning						

In the *Disposition* category, figures reflect sales and not necessarily production. In the *Employment* category, *Nonproduction* includes temporary, technical and clerical personnel and employees working in central preparation plants, central shops, etc.

Name of operator	Name of mine	Township	Seam	Thickness (inches)	Type of mine	Method of production	Tonnage produced Σ 1983	Days in operation Σ 1983	Disposition		Employment			State mine number
									Method	Tonnage	Production		Non production	
											Underground	Surface		
ATHENS COUNTY — Total production = 2,658 tons Lee & Lawson, Inc.	York		6	120	surface	strip	2,658	76	truck	2,658	2		As-271	
	Wheeling Wheeling		9 9	42 43	surface surface	strip strip auger	291,328 1,060,826 77,827	156 244	rail rail	291,328 1,040,078	61 62		Bt-133 Ht-700	
BELMONT COUNTY — Total production = 6,810,754 tons Bannock Coal Co. Consolidation Coal Co., Midwestern Region					Total	Total	1,138,453							
	Flushing Flushing		8 8 9	40 38 42	surface surface	strip strip auger	68,783 221,722 25,253	252 252	rail rail water truck	68,783 1,654 229,015 16,306	10		Bt-146 Bt-967	
						Total	246,975		Total	246,975				
Cravat Coal Co.	Sandy Ridge	Goshen, Warren	11	14	surface	strip	9,798	64	rail water	9,132 666	2		Bt-102	
	Lady Bend	Kirkwood	9	32	surface	strip auger	21,012 10,446	85	rail truck	9,798 21,628 9,830	2		Bt-131	
						Total	31,458		Total	31,458				
	Malcuit #2	Kirkwood	11	22	surface	strip	103,430		rail water	65,138 38,292			Bt-143	
						Total	103,430		Total	103,430				
	Loase Pit	Kirkwood, Smith	8	42	surface	strip	45,354	220	rail truck	11,598 21,611	8	2	Bt-982	
						Total	45,354		Total	45,354				
	Hendrysburg	Kirkwood	8	36	surface	strip auger	73,219 2,412	123	rail truck	28,949 46,682	9		Bt-C1	
						Total	75,631		Total	75,631				
	Dover Kriechbaum	York	8	54	surface	strip	17,145	252	rail truck	14,356 2,789	4	1	Bt-78	
									Total	17,145				

Dudek, Joe, Coal Mining Co. Fairpoint Coal Co.	Dudek #2 Miller Mel Worth	Wheeling Richland Richland	9 11 8 9	52 36 60 36	surface surface surface surface	strip strip strip strip	3,729 9,213 20,760	4 truck truck other	3,729 9,213 20,760	2 8	1 Bt-616 Bt-82 Bt-927
GEX Hardy, Inc.	Mager Hartman Flushing Mine	Richland Wheeling Flushing	11 11 9	38 40 36	surface surface surface	strip strip strip	6,857 9,351 297,130	24 conveyor 7 rail 268 truck	6,857 9,351 297,130	2 39	1 Bt-974 Bt-87 Bt-977
Joyce Coal Co. Krulock, Inc. Marietta Coal Co. <sup>2</sup>	Andy's Pit Jeffrey Groves Strip Negus-Berry Greathouse-Smigle-Kennedy-Vargo Hays-Blake Ayers Simpson Pit Getzlaff Wilkinson	Colerain Richland Colerain Colerain Goshen, Union Pease Richland Richland	8 11 11 11 11 12 10 11 11	60 32 31 30 30 58 31 31 44	surface surface surface surface surface surface surface surface surface	strip strip strip strip strip strip strip strip auger	14,660 510 12,153 36,882 72,939 15,692 28,376 44,685 12,921	47 truck 1 unspecified 25 truck 52 truck 86 truck 33 truck 24 truck 76 truck	14,660 510 12,153 36,882 72,939 15,692 28,376 44,685 12,921	2 11 22	Bt-980 Bt-998 Bt-82 Bt-112 Bt-150 Bt-905 Bt-107 Bt-132
Borovich-DePaoli-Seaway-Neitzelt	Richland	Richland	11	40	surface	strip strip auger	57,606 68,607 16,203	127 truck	57,606 68,607 16,203		Bt-147
H. Carpenter-Loy Cooper-Snedeker-Consol-Keefer	Richland	Richland	11 10 20 11 12 30 9	37 20 36 30	surface surface surface surface	strip strip strip strip	60,781 16,003	80 truck 43 truck	60,781 16,003		Bt-151 Bt-865
M. Bungardner Pit	Negus Pit Powhatan #6 Powhatan #3 No. 38 Strip-Martins Ferry No. 38 Strip-Yorkville	Smith Colerain Washington Mead Pease Pease	10 12 8 8 11 12 11	30 48 62 62 36 55	surface surface slope slope surface surface	strip strip cont. miner cont. miner strip strip	15,112 50,181 1,075,543 156,062 67,233	15 truck 82 truck 243 rail 36 water 275 truck	15,112 50,181 1,182,782 156,609 67,233	4 302 49	Bt-111 Bt-992 Bt-68 Bt-3 Bt-889 Bt-918
N & G Construction Co., Inc. Nacco Mining Co. North American Coal Corp. Ohio Coal & Construction Corp.	No. 38 Strip-Sunset Heights No. 38 Strip-Ebberts Rd. No. 38 Strip-Biane Area	Pease Richland Richland	12 12 12 9 10 30	40 55 55 48 30	surface surface surface surface surface	strip strip strip strip strip	6,020 95,973 62,393	66 truck 275 truck 275 truck	6,020 95,973 62,393	1 9 11	Bt-1094 Bt-87 Bt-99
Ohio River Collieries, Inc.	No. 38 Strip-Banfield Rd. Miller Pit	Richland Union	11 11 9	36 40	surface surface	strip strip	78,203 30,678	275 truck 48 truck	78,203 30,678	13 3	Bt-142 Bt-137
2400 Pit Large	Union	Union	11	28	surface	strip	75,991	102 rail water truck	75,991	14	Bt-957
Lafferty 7400	Union	Union	9 11	42 28	surface	strip	47,572	91 water truck	47,572	9	Bt 1074
Black Oak	Wheeling	Wheeling	9	48	surface	strip auger	36,954 3,272	100 rail water truck	36,954 3,272	14	Bt-948
Total							40,226	Total	40,226		

<sup>1</sup>No mine number has been assigned by the Division of Mines.  
<sup>2</sup>Employment reported for Bt-82 is a summary of employment for all Marietta Coal Co. operations.

<sup>1</sup>No mine number has been assigned by the Division of Mines.  
<sup>2</sup>Employment reported for Bt-82 is a summary of employment for all Marietta Coal Co. operations.



## 1983 OHIO DIRECTORY OF REPORTING PRODUCING COAL-MINE OPERATORS, BY COUNTY—Continued

Name of operator	Name of mine	Township	Seam	Thickness (inches)	Type of mine	Method of production	Tonnage produced in 1983	Days in operation in 1983	Disposition		Employment		State mine number
									Method	Tonnage	Underground	Surface	
BELMONT COUNTY (continued) R & F Coal Co.	Cleaver-Morrison	Colerain	11	24	surface	strip	18,372	64	water truck	15,375	1	1	Bt-RP <sup>3</sup>
									Total	2,929			
									none	18,304			
	Yopa Spiller-Kata-Gerke Secrest-Conner-Cann-Gregg	Colerain Goshen	11 11	30 35	surface surface	strip strip	21,452 204,557	226	water truck	181,052	24	24	Jfn-750 Bt-127
									Total	16,155			
									none	0			
	R. White Hollingsworth	Goshen Goshen	11 11 12	27 30 22	surface surface surface	strip strip strip	2,189 90,609	21 214	water truck	1,915	1 12	1 12	Bt-141 Bt-153
									Total	83,446			
									water truck	7,338			
	Wright Loy-Mayberry-Andrews-Collins	Goshen Goshen	11 11	30 24	surface surface	strip strip	738 125,466	19 212	water truck	645	14	14	Bt-917 Bt-1097
									Total	8,802			
									water truck	122,175			
	Phillips-Burson-McWilliams	Kirkwood, Warren	8 9	48 50	surface surface	strip	377,032	249	water truck	333,560	58	2	Bt-984
									Total	28,198			
									water truck	361,758			
	Bedway-Consol-Shipe II	Kirkwood	8 9	45 40	surface surface	strip	24,341	75	water truck	28,349	7	1	Bt-983
									Total	4,409			
									water truck	32,758			
	Methodist Ridge	Richland	11	45	surface	strip	16,058	91	water truck	7,715	6	2	Bt-154
									Total	1,464			
									water truck	9,179			
	Butcher-Kacere	Richland	11	41	surface	strip auger	106,098 6,217	199	water truck	98,706	21	2	Bt-95
									Total	7,338			
									water truck	106,044			
	J. Eddy-Ogilbee-Mann	Richland	11	36	surface	strip auger	44,011 3,001	84	water truck	41,725	8	8	Bt-97
									Total	106,044			
									water truck	41,725			
	Newlin-Fador-Sprout-Fleagane	Richland	11 12	42 40	surface	strip	143,057	215	water truck	129,235	20	1	Bt-149
									Total	5,874			
									water truck	135,109			
	Patterson Mudrak	Richland	11 9	32 50	surface surface	strip strip auger	10,594 16,054 1,561	63	water truck	9,270	2	2	Bt-921 Bt-985
									Total	15,413			
									water truck	17,615			

Loy McFarland	Richland	11	36	surface	strip	71,006	95	water truck	54,024 10,291	7	1	Bt-1095
Merritt Ramsay	Richland, Smith	11	24	surface	strip	108,265	166	water truck	64,315	7	1	Bt-1096
Doteski Consol	Smith	11	26	surface	strip auger	84,994 14,796	218	water truck	96,685 11,755	11	1	Bt-152
Thornburg Mitchell-Ramsay-Passmore	Smith	11 12	30 28	surface	strip auger	99,790 52,476 2,686	148	water	108,440	10	1	Bt-920
Marsh-Jefferts	Somerset	11	32	surface	strip	55,162	181	water truck	87,673 7,338	6		Bt-138
Stenger Groves Talbot DeVault	Union	11	20	surface	strip	125,675	223	water truck	95,011	11	1	Bt-148
Saginaw Mine	Richland	8	60	slope	cont. miner	442,433	197	rail truck	47,628	55		Bt-643
								Total	27,243 1,464			
								Total	28,707			
								Total	113,200 10,282			
								Total	123,572			
								Total	456,478 188			
								Total	456,666			
Stotzer Mine Blade Pit 7400 Pit	Rose	5 6 5 5 7	24 26 22 22 18	surface surface surface surface surface	strip strip strip strip strip	27,336 9,518 38,160	34 41	truck truck truck	27,336 9,518 38,160	3 1		Cl-212 Cl-219 Cl-17
9W Pit	Rose	5	22	surface	strip	45,599	269	truck	45,599	25	5	Cl-162
Cam #2 Pit	Lee	6	42	surface	strip	36,144	255	truck	36,144	6		Cl-207
Blue Bird	Brown	6	31	surface	strip	17,507	131	truck	17,507	3		Cl-213
Yeager	Lee	6	20	surface	strip	5,207	6	truck	5,207	1		Cl-214
Limestone Plant-Harlem Springs	Lee	8	37	surface	strip	3,754	59	truck	3,754	1		Cl-183
Germano Pit	Louden	8	37	surface	strip	19,683	3,799	truck	23,482	1		Hn-729
								Total	23,482			
Blum Noble	Lee	H	19	surface	strip	26,604	31	truck	26,604	4	2	Cl-216
General Mines Kensington Pit Guilford Lake Job Buzzard Pit	Hanover Center Madison	6 6 6	36 36 30	surface surface surface	strip strip auger	6,437 49,457 55,880 3,165	108 267 257	truck truck truck	6,436 49,457 59,045	1 6 11	1 3 2	Ca-968 Ca-39 Ca-240
Mick Pit	Yellow Creek	6	30	surface	strip	59,045	257	truck	100,303	14	1	Ca-864
								Total	94,221 6,082			
								Total	100,303			
McCormick Run C & W Strip No. 2 Toth Strip "C" Mine Crawford Coal Co.	Madison Elkrun, Madison Franklin Hanover Elkrun	6,7 6 6 6 6	30 21 20 28	surface surface surface surface	strip strip strip strip	12,931 29,416 17,413 73,965 5,545	15 57 189 173	truck truck truck truck	12,931 29,416 17,413 73,965 5,545	9 3 9 3	3 1 1	Ca-892 Ca-875 Ca-765 Ca-829 Ca-827

CARROLL COUNTY — Total production = 233,311 tons

COLUMBIANA COUNTY — Total production = 988,007 tons

\*No mine number has been assigned by the Division of Mines.  
 †See also Jefferson County.  
 ‡See also Harrison County.

Name of operator	Name of mine	Township	Seam	Thickness (inches)	Type of mine	Method of production	Tonnage produced in 1963	Days in operation in 1963	Disposition		Employment			State mine number
									Method	Tonnage	Production		Non-Production	
											Underground	Surface		
COLUMBIANA COUNTY (continued)														
D & D Mining Co.	Glenmoor	Madison	6	30	surface	strip	3,877	52	truck	3,977	2		Ca-862	
	Lyons Pit	Middleton	6	30	surface	strip	5,975	106	truck	5,975	1		Ca-891D <sup>6</sup>	
	Jack Foster Pit	Unity	3	30	surface	strip	16,888	225	truck	16,888	4		Ca-872	
	Dickson	Unity	3	30	surface	strip	24,472	255	truck	24,472	6		Ca-888	
	"W" Mine	Fairfield	4	30	surface	strip	73,558	230	truck	73,558	13		Ca-894	
	7400 Pit	Elkrun	7	25	surface	strip	104,839	230	truck	104,839	15		Ca-154	
	Guilford Mine	Fairfield	6	32	surface	strip	1,957	225	truck	1,957	1		Ca-784	
	Getz Strip	Hanover	6	24	surface	strip	12,194	60	truck	12,194	5		Ca-G7	
	Getz Strip	Center	7	18	surface	strip	7,526	94	truck	7,526	1		Ca-883	
	Jim Town	Hanover	7	34	surface	strip	43,380	126	truck	43,380	3		Ca-336H <sup>6</sup>	
Hutson Road Mining Co.	Getz Strip	Middleton	7	31	surface	strip	75,248	257	truck	86,079	17		Ca-1M <sup>7</sup>	
Industrial Mining Co.	Travers Pit	Wayne	6	20	surface	strip	10,831		truck				Ca-850	
	Rogers Pit	West	6	20	surface	auger								
					Total		86,079							
Johnson Mining Co.	Johnson Mining	Madison	6A, 7	19	surface	strip	12,766	60	truck	9,457	5		Ca-893	
	Baker Mine	Fairfield	7	36	surface	strip	12,230	107	truck	12,230	2		Ca-343	
	R-3	Center, Franklin, Wayne	6	36	surface	strip	78,994	159	truck	82,935	11		Ca-836	
						auger	3,941							
					Total		82,935							
Lisbon Coal Crushers, Inc.	McLaughlin	Center	7	28	surface	strip	5,035	145	truck	5,035	1		Ca-901	
	Parker-Madden Mine	Unity	7	30	surface	strip	4,312	52	truck	4,312	2		Ca-877	
	M & M Builders & Supply & Exc.	Elkrun	6	28	surface	strip	7,413	37	truck	7,413	2		Ca-M5 <sup>7</sup>	
	M & S Coal Co., Inc.	Madison	6	28	surface	strip	12,231	186	truck	18,129	7		Ca-863	
					auger	5,898								
					Total		18,129							
Magnum Coal, Inc.	Magnum Coal, Inc.	Elkrun, Madison	6	34	surface	strip	27,746	232	truck	27,746	4		Ca-891M <sup>6</sup>	
	C-915 Strip	Center	6	18	surface	strip	5,497	64	truck	5,497	2		Ca-336M <sup>6</sup>	
	Mansfield Hawk Mining	Center	6	18	surface	strip	22,339	193	truck	22,339	5		Ca-886	
	Hurrenuk Pit	Hanover	7	26	surface	strip	9,734	303	truck	9,734	2		Ca-854	
	P & J Mining Co.	Hanover	6	18	surface	strip	2,356	9	unspecified	2,356	1		Ca-345	
	Jeffco Mining	Madison	6	24	surface	strip	3,595	7	unspecified	3,595	1		Ca-895	
	Plate No. 2	Madison	6	44	drift	cont. miner	8,662	186	truck	8,662	2		Ca-714	
	Flaming Arrow	Washington	6	24	surface	strip	2,054	15	truck	2,054	2		Ca-342	
	Star K Mining	Unity	4	30	surface	strip	12,834	234	truck	12,834	3		Ca-885	
	Thompson Bros. Mining Co.	Foster Strip												
COSHOCTON COUNTY - Total production = 1,274,883 tons														
Apex Mining, Inc.	Apex #1	Lafayette	6	42	surface	strip	3,411	85	truck	3,411	6		Cn-793	
	Costocton Pit	Franklin, Tuscarawas	6	42	surface	strip	52,171	252	truck	52,172	7		Cn-766	
	G & M Mineral Co.	Franklin	5	36	surface	strip	31,051	237	truck	31,052	8		Cn-757	
	Holmes Limestone Co.	Mill Creek	4	30	surface	strip	8,293	135	truck	8,293	1		Cn-770	
	Hutt Coal Co.	Linton	5	22	surface	strip	1,650	11	truck	1,650	1		Cn-796	
	Ohio Amco, Inc. <sup>8</sup>	Franklin	6	40	surface	strip	1,121	9	truck	2,063	2		Cn-790	
	Simco				auger	942								
					Total		2,063							
Simco	Simco	Franklin, Linton	6	42	surface	strip	10,845	32	truck	17,086			Cn-794	
					auger	6,241								
					Total		17,086							



R & F Coal Co.	Burton	Jackson	5 6	28 12	surface	strip	47,439	51	water truck	42,662 1,464	4	1	Cn 801
	Lauvray	Keene	5	32	surface	strip	18,361		Total	44,126	2	1	Cn 802
	Apple-David	Lafayette, Oxford	5 6	26 30	surface	strip auger	31,970 6,902		Total	15,459 2,945	4	1	Cn 797
	Simco-Peabody Pit	Linton	5 6	20 39	surface	strip	38,872		Total	18,404		38	Mum 845
Tri-Valley Energy, Inc. Wills Creek Energy Co.	Tri-Valley Strip	Lafayette	6	42	surface	strip	2,521	18	truck	2,521	1	1	Cn 792
	Black Mine	Lafayette, Oxford	6	30	surface	strip	14,785	130	truck	14,785	3	4	Cn 795
	Gress Mine	Oxford	6	30	surface	strip auger	45,398 6,752		truck	52,155	10	5	Cn 741
	Courtright Mine	Oxford	5 6	30 30	surface	strip auger	52,150 59,223 1,516	115	truck	60,739	10	6	Cn 768
Poland Mine	Oxford	Oxford	5 6	30 30	surface	strip auger	60,739	43	truck	25,335	7	5	Cn 779
	Ungurean Mine	Oxford, Tuscarawas	6	30	surface	strip auger	22,497 2,838	26	truck	17,454	4	3	Cn 800
						Total	25,335						
						Total	14,739 2,715						
Crown City Mining Co. <sup>9</sup>	Crown City Mine	Guyan	8A	34	surface	strip auger	127,823 33	250	water	127,856	47	13	Ga 220
	Green & Burritt Coal Co. Merco Mining, Inc.	Huntington Huntington	6 6	54	surface	strip strip	127,856	271 204	truck unspecified	62,881 84,558	4 11	1 8	Ga 242 Ga 240
	Horizon Coal Co. Kruback, Inc.	Adams Center Oxford	A 7 8	24 42 42	surface surface surface	strip strip strip	461 3,443 47,101	5 6 89	truck truck rail truck	461 3,443 24,844 22,257	13 3 12		Gy 293 Gy 297 Gy 290
	R & F Coal Co.	Wheeling	5 6	29 30	surface	strip auger	67,130 15,089	63	Total	47,101	8	1	Gy 300
RVG, Inc. Thompson Mining Co. Tri Coal Co.	Hall-Campbell Farrell-Moore	Millwood	8	42	surface	strip auger	82,219	231	Total	91,920	21	1	Gy 279
	RVG #1 Costanza Property Center #1	Valley Jackson Center	7 7 7	48 60 60	surface surface surface	strip strip strip	115,141 28,233	34 17 268	truck truck truck	118,687 29,560	4		Gy 296 Gy 299 Gy 289
	Consolidation Coal Co., Midwestern Region	Cadiz	6A	60	shaft	longwall cont. miner conventional	143,374	239	Total	148,247		44	Hn 658
						Total	558,406 47,818 260,551		rail	746,009	132		
HARRISON COUNTY — Total production = 2,503,038 tons													
Oak Park #007													

GALLIA COUNTY — Total production = 275,325 tons

GUERNEY COUNTY — Total production = 399,008 tons

<sup>9</sup>This mine number has been duplicated for another company.<sup>10</sup>No mine number has been assigned by the Division of Mines.<sup>11</sup>See also Muskingum County.<sup>12</sup>See also Lawrence County.

## 1983 OHIO DIRECTORY OF REPORTING PRODUCING COAL-MINE OPERATORS, BY COUNTY—Continued

Name of operator	Name of mine	Township	Seam	Thickness (inches)	Type of mine	Method of production	Tonnage produced in 1983	Days in operation in 1983	Disposition		Employment			State mine number
									Method	Tonnage	Production		Non-production	
											Under-ground	Surface		
HARRISON COUNTY (continued)	Fairpoint Coal Co. McGinness Bros. Coal Co. Puskarch Mining Co.	Short Creek German Monroe	11 H 7	32	surface	strip	8,178	26	truck	3,580	3	Hn-205		
				38	surface	strip	116,948	201	truck	116,948	15	Hn-742		
					surface	auger	59,841	252	rail	63,252	13	Hn-743		
						Total	18,648		truck	15,088				
		Germano Pit	German	8	37	surface	strip	19,683	188	truck	78,340		Hn-729	
						auger	3,799							
						Total	23,482							
	R & F Coal Co.	Archer	8 8A	53	surface	strip	25,766	138	water truck	22,412	3	Hn-204		
				14					truck	2,936				
						Total			Total	25,348				
					strip	2,817	6	water truck	7,730	2	Hn-207			
				48					truck	1,472				
Boich-Staley-State-Corban	Archer	8 8A	50	surface	strip	43,547	140	water truck	41,722	8	Hn-704			
			15					truck	2,936					
					Total			Total	44,658					
					strip	241,702	239	water truck	217,959	32	Hn-731			
Harrison County Home-Gilmore Ridge	Archer, Cadiz	8 8A 9	42	surface	strip	7,392		water truck	20,540					
			12		auger									
			40		Total	249,094		Total	238,499	20	Hn-735			
					strip	115,652	220	water truck	101,431					
Jewett-Sportsman	Archer	8, 8A, 9	57	surface				truck	10,274					
					Total			Total	111,705					
					strip	2,184	21	water	1,911					
					strip	116,623	221	water	110,029	21	Hn-736			
Houze-Consol Michelos-Pruneski	Cadiz Short Creek	8 8 9	40	surface	strip	7,663		water truck	10,274		Hn-739			
			60	surface	auger									
			34		Total	124,286		Total	120,303	15	Hn-746			
					strip	118,441	230	water truck	108,436					
Varkony-Penova-Myers	Short Creek	8 8A	52	surface				truck	10,282					
			20		Total			Total	118,718					
					strip	56,908	252	truck	77,961	4	Hn-744			
					auger	21,053								
T P Strip	Monroe	7	42	surface	strip	77,961		truck						
					Total									
					strip	5,236	15	truck	5,236	2	Hn-741			
					strip	5,583	15	truck	5,583	2	Hn-741			
Tapp Resources Triad Mining, Inc. Varkony Mining Co. W B Coal Co.	Delta Pit Clark Pit Myers Strip Ann Strip #1	7 8A H	22	surface	strip	6,662	12	unspecified truck	6,662	1	Hn-701			
					strip	65,596			65,596	4	Hn-694			
					strip									
					strip									

Youghiogheny & Ohio Coal Co.		Nelms #2	Green	6A	56	shaft	cont. miner	866,341	246	rail truck other	340	64	Hn-169
<b>HOCKING COUNTY — Total production = 550,618 tons</b>													
Boyle Coal Co.	Boyle Strip	6A	Ward	6A	24	surface	strip	49,002	256	truck	49,002	1	Hg-253
Daft Coal Co.	Union Furnace Pit	6	Starr	6	18	surface	strip	58,927	212	unspecified	58,927	2	Hg-312
Nutter Bros. Coal Co., Inc.	Nutter Bros. Coal Co., Inc.	6	Green	6	36	surface	strip	17,138	104	truck	17,138	3	Hg-316
Quality Coal Co.	Nutter #2 Pit	4	Washington	4	24	surface	strip	24,850	193	truck	24,850	6	Hg-293
	Wharton Pit	6A	Starr	6A	30	surface	strip	75,705	66	truck	75,705	4	Hg-313
	Owens	6	Starr	6	30	surface	strip	20,691	180	truck	20,691	3	Hg-318
	Coonville Pit	6, 6A	Starr	6, 6A	30	surface	strip	249,667	260	water truck	80,990	14	Hg-284
Stewart Coal Co.								168,677		truck	168,677		
Valley Coal Co.								249,667		Total	249,667		
	Darmac Pit	6A	Starr	6A		surface	strip	54,638		water truck	5,094		Hg-295
								49,544		truck	49,544		
								54,638		Total	54,638		
<b>HOLMES COUNTY — Total production = 361,374 tons</b>													
GEX Hardy, Inc.	Page Area	5	Walnut Creek	5	32	surface	strip	15,628	176	truck	15,628	2	Hs-73
Holmes Limestone Co.	Charm Mine	5	Berlin	5	36	surface	strip	68,765	280	truck	68,765	1	Hs-64
	Wayne Mine	4	Prairie	4	26	surface	strip	56,525		truck	56,525	8	Hs-79
	241 Plant	4	Salt Creek	4	18	surface	strip	10,347		truck	10,347		Hs-67
	Bunkerhill Pit	5	Walnut Creek	5	34	surface	strip	162,500	270	truck	162,500	11	Hs-80
	Cherry Ridge Pit	6	Clark	6	30	surface	strip	40,243	76	truck	40,243	2	Hs-86
Miller Mining Co.	Miller Mines	5	Walnut Creek	5		surface	strip	7,366		truck	7,366		Hs-85
<b>JACKSON COUNTY — Total production = 707,438 tons</b>													
Adams Coal Co.	Adams Pit	5	Madison	5		surface	strip	1,342		truck	1,342		Jkn-556
Belville Mining Co.	Bel Lake	4A	Jefferson	4A	60	surface	strip	6,518	8	truck	6,518	1	Jkn-564
Cardinal Coal Co.	Houser 85	1	Jackson	1	24	surface	strip	4,764	9	truck	4,764	3	Jkn-559
Eberts, J. & E., Coal Co.	J. & E. Eberts Strip	3	Milton	3	24	surface	strip	21,694	79	truck	21,694	2	Jkn-570
		4		4	30								
Elk Coal Co., Inc.	Bowling Strip	4, 5	Milton	4, 5		surface	strip	16,671	53	truck	16,671	2	Jkn-576
LaMay Coal Co., Inc.	Gilmore Pit	4, 5	Bloomfield	4, 5	30	surface	strip	49,552	268	truck	49,522	2	Jkn-1054
	LaMay Mine	6	Bloomfield	6	30	surface	strip	31,427	268	truck	31,427	2	Jkn-573
Milton Mining Co.	Greasy #1 Mine	4A	Milton	4A	54	drift	cont. miner	86,860	147	truck	86,860	2	Jkn-548
Oak Grove Coal Co.	Oak Grove Coal Co.	4	Milton	4	48	surface	strip	3,650	57	truck	3,650	1	Jkn-1049
Stewart Construction	Bush & Field	5	Milton	5	36	surface	strip	12,908	76	truck	12,908	4	Jkn-574
Walton Coal Co.	Walton Pit	6	Milton	6	38	surface	strip	17,890	186	truck	17,890	3	Jkn-558
Waterloo Coal Co.	Bowman Strip	4A	Bloomfield,	4A	48	surface	strip	406,995	267	truck	406,995	15	Jkn-367
		5	Madison	5	34								
		6		6	12								
	Royal Oak	1	Liberty	1	24	surface	strip	47,167	62	truck	47,167	6	Jkn-530
<b>JEFFERSON COUNTY — Total production = 1,836,214 tons</b>													
Anthony Mining Co., Inc.	Island Creek #43	8	Island Creek	8	48	surface	strip	127,193	225	truck	127,193	3	Jfn-693
Boich Mining Co.	Betsy Pit	8	Cross Creek	8	56	surface	strip	325,982	228	truck	325,982	17	Jfn-528
D & L Contractors, Inc.	D & L Strip	8A	Smithfield	8A	48	surface	strip	60,345	213	truck	60,345	2	Jfn-780
F & M Coal Co.	E & E Strip	8	Wayne	8	54	surface	strip	18,461	129	truck	10,461	2	Jfn-784
Industrial Mining Co.	Ralston Pit	8A	Ross	8A	16	surface	strip	51,708	257	truck	79,008	10	Jfn-1286
		6		6	46	surface	auger	27,381					
							Total	79,089					
Jefferson Holding, Inc.	Elkhorn Strip	5	Springfield	5	34	surface	strip	7,685	71	truck	7,482	2	Jfn-1277
Marietta Coal Co.	Bedway Wehr-Adamsky	11	Mount Pleasant	11	31	surface	strip	16,591	30	truck	16,591		Jfn-783
Ohio Coal & Construction Corp.	No. 30 Strip	11	Warren	11	30	surface	strip	11,668	45	truck	1,668	1	Jfn-786
	No. 36 Strip-Y/O	11	Warren	11	36	surface	strip	39,164	159	truck	39,164	4	Jfn-787
	No. 36 Strip	8	Wells	8	60	surface	strip	139,231	276	truck	139,231	19	Jfn-711
		8A		8A	24								

<sup>10</sup>See also Carroll County.

<sup>11</sup>No mine number has been assigned by the Division of Mines.

<sup>12</sup>Jkn-530 operated 1st and 2nd quarters by Cardinal Coal Co.



## 1983 OHIO DIRECTORY OF REPORTING PRODUCING COAL-MINE OPERATORS, BY COUNTY—Continued

Name of operator	Name of mine	Township	Seam	Thickness (inches)	Type of mine	Method of production	Tonnage produced in 1983	Days in operation in 1983	Disposition		Employment		State mine number
									Method	Tonnage	Production		
											Underground	Surface	
JEFFERSON COUNTY (continued)													
Ohio Edison Co. R & F Coal Co. <sup>13</sup>	Ohio Edison Strip Mine	Knox	8	30	surface	strip	169,366	341	truck	169,366	29	1	Jfn-1267
	Yopa Spoiler-Kata Gerke	Mount Pleasant	11	30	surface	strip	38,893	124	water truck	51,921 5,889	7		Jfn-750
									Total	57,810			
S & D Construction Corp.	Morrison Dudley	Mount Pleasant	11	35	surface	strip	15,139	108	water truck	14,682 1,464	2		Jfn-RF1 <sup>14</sup>
									Total	16,146			
	Tabacchi-Cohen-Kross-Polen-North	Wayne	8	50	surface	strip	120,491	237	water truck	106,110 8,818	25	1	Jfn-720
Schiappa Coal Co., Inc.			8A	22									
			9	12									
									Total	114,928			
Valley Mining, Inc.	Polen	Wayne	8A	16	surface	strip	6,396	44	none	0	2	2	Jfn-RF2 <sup>14</sup>
	Rankin Mine #2	Knox	8	36	surface	strip	5,744	20	truck	5,744	2	2	Jfn-1292
	Rankin Mine #3	Knox	8	48	surface	strip	25,196	40	truck	25,196	5	3	Jfn-1294
S & D Construction Corp.	#43 Strip	Island Creek	8	48	surface	strip	184,368	239	truck	184,368	32	3	Jfn-673
	Strip No. 1	Smithfield	8	48	surface	strip	184,220	230	truck	212,399	20		Jfn-785
			8A	30		auger	28,179						
W B Coal Co.						Total	212,399						
	Ann Strip #2	Salem	H	22	surface	strip	13,450	189	truck	13,450	4	1	Jfn-762
	#19 Pit	Wells	8	54	surface	strip	159,067	85	truck	159,067	25	2	Jfn-687
Zimnox Coal Co.	Zimnox #4	Wells	8	50	surface	strip	60,296		truck	60,296	16	5	Jfn-703
LAWRENCE COUNTY — Total production = 410,173 tons													
Belville Mining Co.	Brady Creek #1	Washington	5	36	surface	strip	56,104	131	truck	56,104	18	1	Le-432
Crown City Mining Co. <sup>15</sup>	Crown City Mine	Mason	8A	34	surface	strip	340,590	105	water	340,695	47	14	Ga-220
						auger							
						Total	340,695						
Cyclone Energy & Construction	Blackfork Mine	Washington	5	30	surface	strip	13,374	90	truck	13,374	2		Le-436
MAHONING COUNTY — Total production = 210,170 tons													
Carbon Limestone Co.	Ohio Pit	Poland	6	23	surface	strip	16,018	235	truck	16,018	4		Mg-507
D & D Mining Co., Inc.	K & M Mine	Beaver	4	30	surface	strip	12,228	203	truck	12,228	4		Mg-66
East Fairfield Coal Co.	"K" Mine	Springfield	4	32	surface	strip	86,625	203	truck	104,787	21	3	Mg-603
			5	32		auger	18,162						
			6	16		Total	104,787						
Keller Mines, Inc.	Keller Pit	Smith	5	36	surface	strip	6,898	38	truck	9,778	1	4	Mg-31
Mesmer, Ted. & Sons, Inc.	V Pits Mine	Beaver	5	48	surface	strip	3,337	303	truck	3,337	2	3	Mg-59
Thompson Bros. Mining Co.	Peres Mine	Beaver	6	10									
			4	30	surface	strip	66,902	314	truck	66,902	12	1	Mg-65
MEIGS COUNTY — Total production = 2,259,488 tons													
Southern Ohio Coal Co.	Meigs #2 Mine	Columbia	4A	57	shaft	cont. miner longwall	756,918 745,783	159	conveyor	1,682,441	373	120	Ms-294
						Total	1,502,701						

MONROE COUNTY — Total production = 2,877,716 tons									
Meigs #1 Mine	4A	57	shaft	cont. miner longwall	515,828 240,959	158	conveyor	828,812	255
Quarto Mining Co.				Total	756,787				
Powhatan #4									
Salem	8	59	shaft	longwall cont. miner	1,588,856 1,012,061	242	water	2,556,975	656
				Total	2,580,917				
Powhatan #7									
Salem	8	48	slope	longwall cont. miner	278,226 18,573	243	water	295,525	149
				Total	296,799				
MUSKINGUM COUNTY — Total production = 2,336,420 tons									
Central Ohio Coal Co. <sup>16</sup>									
Muskingum Pit	9	49	surface	strip	1,347,643		conveyor other	1,347,631 12	290
							Total	1,347,643	
Bloomfield Leishman									
Highland Rich Hill, Union	A 8	36	surface	strip auger	17,519 4,960	103	truck	17,519 5,881	2
				Total	5,881				
Westland-Patton Deal & Taylor									
Union Highland, Salt Creek	8 A	26 24	surface	strip strip	4,135 8,969	35	truck	4,135 8,969	1
King Quarries, Inc.									
King Strip	6	42	surface	strip	24,824	63	truck	24,824	19
King Strip	6	42	surface	strip	44,100	100	truck	44,100	20
King Strip	6	42	surface	strip	10,989	45	truck	10,989	11
King Strip	6	42	surface	strip	12,397	36	truck	12,397	12
Marshall Strip	7	36	surface	strip	9,145	18	truck	9,145	1
Marshall Strip	7	48	surface	strip	46,692	69	truck	46,692	3
Muskingum Mine	6	33	surface	strip	672,936	236	conveyor	672,936	124
Ohio Amco, Inc. <sup>17</sup>	6	40	surface	strip auger	1,120 943		truck	2,063	
				Total	2,063				
Sands Mining Corp.									
Washington	7	60	surface	strip	15,430		truck	15,430	2
Washington Newton	6 5	35	surface	strip strip	93,466 20,231		truck	93,466 20,231	23 6
NOBLE COUNTY — Total production = 2,614,922 tons									
Bennoc, Inc.									
Central Ohio Coal Co. <sup>18</sup>	9 9	49	surface	strip strip	16,658 2,164,492	37 233	truck conveyor other	16,658 2,164,462 30	5 289 134
							Total	2,164,492	
Orange Coal Co.									
Summerfield Pit	9	30	surface	strip auger	134,661 13,432	177	truck	148,093	8
				Total	148,093				
Carlisle Pit									
Stock	9	30	surface	strip auger	214,368 31,156	123	truck	245,524	7
				Total	245,524				
R & F Coal Co.									
Timmons	8	45	surface	strip auger	37,064 3,091	53	water truck	30,876 5,881	7
				Total	40,155		Total	36,757	

<sup>16</sup>See also Belmont County.<sup>17</sup>No mine number has been assigned by the Division of Mines.<sup>18</sup>See also Gallia County.<sup>19</sup>See also Noble County.<sup>20</sup>See also Coshocton County.<sup>21</sup>See also Muskingum County.

## 1983 OHIO DIRECTORY OF REPORTING PRODUCING COAL-MINE OPERATORS, BY COUNTY—Continued

Name of operator	Name of mine	Township	Seam	Thickness (inches)	Type of mine	Method of production	Tonnage produced in 1983	Days in operation in 1983	Disposition		Employment		State mine number	
									Method	Tonnage	Production			Non-production
											Underground	Surface		
PERRY COUNTY — Total production = 1,852,219 tons														
Crooksville Coal Co., Inc.	Crooksville Strip	Bearfield, Clayton	5 6	36 42	surface	strip	244,641	301	rail truck	67,634 192,882	40	9	Py-286	
									Total	280,516				
Nutter Brothers Coal Co., Inc. Peabody Coal Co.	#1 Pit Sunnyhill #9 North	Coal Bearfield	6A 6	36 55	surface drift	strip conventional cont. miner	20,113 19,765 705,235	193 227	truck rail truck	20,113 672,896 53,774	5	28	Py-304 Py-271	
									Total	726,670				
	Sunnyhill #9 South	Pleasant	6	56	drift	conventional cont. miner	62,253 626,619	227	rail truck	638,792 51,048	180	29	Py-265	
									Total	689,840				
Shawnee Coal Co. Star Mining Co., Inc.	Shawnee Coal Co. Sweeney Gable	Salt Lick Jackson Pike	6 5 6	96 24 36	surface surface surface	strip strip auger	68,502 5,123 9,012 275	302 253	truck truck truck	68,502 5,123 9,287	9 6	2	Py-299 Py-310 Py-311	
									Total	13,090 77,591				
Wells Mining Co. Wills Creek Energy Co.	Carson #1 Pit Miller Mine	Clayton Harrison	5 6	48 30	surface surface	strip strip	13,090 77,591	17 73	truck truck	13,090 77,591	1 7	3	Py-288 Py-WC <sup>10</sup>	
									Total	9,287				
STARK COUNTY — Total production = 1,039,519 tons														
Bask Coal Co. Bear Creek Resort Ranch Corporation	Brad Mine Bear Creek Mine	Paris Pike	7 4	28	surface surface	strip strip	12,792 1,314	231 35	truck unspecified	10,742 1,314	2 1	1	Sk-224 Sk-225	
									truck	68,475				
Burning Hollow Coal Co. Crocket Minerals ENZ, Inc.	Garaux Robertsville Crocket Minerals Ervin Strip	Paris Pike Sandy Lake	6 5 4 4	35 22 42	surface surface surface	strip strip strip	68,474 1,100 33,112	365 35	truck truck truck	68,475 1,100 33,112	9 9 4	3 3 1	Sk-215 Sk-214 Sk-208	
									truck	10,631				
East Ohio Limestone Co. Hillcrest Coal Limited	#2 Hillcrest Coal	Osnaburg Osnaburg	6 5	34 20	surface surface	strip strip	16,658 12,811	269	truck truck	16,658 12,811	8		Sk-196 Sk-221	
									truck	53,553				
Holmes Limestone Co. Horizon Coal Co.	Wilnot Pit Kohl Canton	Sugar Creek Pike Pike	5, 5A 5 4	33 30 24	surface surface surface	strip strip strip	53,553 111,277 236,743	275 155 268	truck truck truck	53,553 111,277 236,743	3 1 8	3	Sk-216 Sk-220 Sk-223	
									truck	93,930				
K & R Enterprises, Inc.	Stark #2 Pit	Osnaburg	5 6 6 7	28 35 36 18	surface surface surface	strip auger	90,794 3,136	123	truck	93,930	23	2	Sk-211	
									Total	113,362				
	Foltz	Osnaburg	5 6 6A	38 34 18	surface surface surface	strip auger	93,930 3,585	120	truck	113,362	19	1	Sk-225	
									Total	157,434				
Kohl Industries	Black Hawk	Bethlehem, Pike	4 5 5A	22 22 18	surface surface surface	strip	157,434	309	truck	157,434	18	3	Sk-217	
									truck	12,770				
Logan Mining Co.	Springwood	Bethlehem	5 5A	22 12	surface surface	strip	12,770	70	truck	12,770	2		Sk-218	
									truck	37,586				
Mansfield Hawk Mining, Inc.	Rindchen Pit	Paris	5 6	20 30	surface surface	strip	37,587	257	truck	37,586	8	2	Sk-201	
									unspecified	28,295				
Statewide Landfill Co.	Statewide Landfill	Canton	5 5A	22 18	surface surface	strip	28,295	123	unspecified truck	28,295 37,653	9	4	Sk-219 Sk-180	
									truck	37,653				
Wilnot Mining Co.	North	Sugar Creek	6		surface	strip	37,676	123	truck	37,653				



## TUSCARAWAS COUNTY — Total production = 1,411,789 tons

Arapaho Mining Co.	Arapaho Mining Lot 19	Fairfield, Goshen	5 6	20 50	surface auger	strip auger	53,506 1,101	203	truck	54,607	10	4	Ts-1921
Archer Mining and Construction Co. Arrow Head Energy, Inc.	Stonereek Arrow Head Strip	Bucks Warwick	5 5 6	24 22 40	surface surface auger	strip strip auger	54,607 9,200 57,290 5,266	unspecified 161	truck	9,200 62,556	1 11	1 3	Ts-1927 Ts-1890
Bluff Hill Coal Co.	Bluff Hill	Warwick	5 6 7	20 42 14	surface auger	strip auger	62,556 14,735 2,090	29	truck	16,825	3	1	Ts-1893
Burning Hollow Coal Co.	Dennison Pit	Union	5	36	surface	strip	36,208	183	truck	36,208	4	1	Ts-1906
Clarence Mining, Inc.	Dennison Pit Wardel Mine	Union Goshen	6 6 5	37 37 30	surface surface strip	strip strip strip	11,826 13,757	92 120	truck truck	11,826 19,757	2 2	1 1	Ts-1932 Ts-1922
Daron Coal Co. Eberhart Coal Co., Inc.	Harstine #2 Hott Strip #2 Hott Strip	Sugar Creek Dover Dover	5B 5 5A 4 5, 5A 5 5A 6	30 36 36 36 36 36 36 36	surface surface surface surface surface surface surface	strip strip strip strip strip strip strip	61,379 36,124 30,934	207 201 176	truck truck truck	61,379 37,873 31,836	6 9 4	2 10 4	Ts-1924 Ts-1526 Ts-1620
Eberhart #2	Eberhart #2	Dover	5 5 5A 6	36 36 36 36	surface surface surface	strip strip strip	23,744 46,176 7,581	158 203	truck truck	25,485 56,047	9 3	6 2	Ts-1882 Ts-1919
Eberhart #2-Hott Strip	Eberhart #2-Hott Strip	Fairfield	5, 6	60	surface	strip auger	53,757 337,123 1,568	284	truck	463,596	52	8	Ts-115
Empire Coal Co.	Empire Pit	Clay	5, 6	60	surface	strip auger	338,691 39,722 6,624	244	truck	46,346	5	4	Ts-1880
GEX Hardy, Inc.	Blue Valley-183	Franklin, Wayne	5	24	surface	strip auger	46,346 28,232 28,764	260 40	truck truck	28,232 28,764	5 2	3	Ts-1929 Ts-1941
Horizon Coal Co.	Stonereek Belden	Jefferson Sandy	6 4 5 5	24 24 30 30	surface surface strip	strip strip	8,573 32,475	50 65	truck truck	8,573 32,475	1	1	Ts-1915 Ts-1727
J & D Mining Co. Kimble Coal Co.	Demuth Pit Kimble Clay and Limestone	Goshen Dover	3A 4 5 5	32 32 10 32	surface surface strip	strip strip	22,543	138	truck	22,543	9		Ts-1914
L & M Minerals, Inc.	Lulkart Evans	Mill Rush, Warwick	5 6 6 6	28 40 42 40	surface surface strip	strip strip	27,834	138	truck	27,834	9		Ts-1884
Liberty Coal Co., Inc.	Ronig Post Boy 101	Warwick Goshen	7 6 5 6	42 22 48	surface surface auger	strip strip auger	6,658 28,568 4,164	61 13	truck truck	6,658 32,732			Ts-1930 Ts-1912
Malcuit, Red, Inc.	RMI No. 1	York	5	30	surface	strip	32,732	253	truck	98,032	7		Ts-1918
Miller Mining Co. Orchard Mining, Inc.	M & M Strip Orchard Mining, Inc.	Wayne Dover	5 6 6	36 surface surface	surface surface	strip strip	13,604 7,350	12	truck unspecified	13,604 7,350	2	1	Ts-1935 Ts-1934
Puskarich Mining Co.	New Cumberland	Warren	5 6	24 32	surface surface	strip auger	9,210 86,023 1,908	252	unspecified rail truck	9,210 59,398 38,040	2 12	1	Ts-1940 Ts-1917
					Total	Total	87,931	Total	Total	97,438			

<sup>1a</sup>No mine number has been assigned by the Division of Mines.

## 1983 OHIO DIRECTORY OF REPORTING PRODUCING COAL-MINE OPERATORS, BY COUNTY—Continued

Name of operator	Name of mine	Township	Seam	Thickness (inches)	Type of mine	Method of production	Tonnage produced in 1983	Days in operation in 1983	Disposition		Employment			State mine number
									Method	Tonnage	Production			
											Under ground	Surface	Non-Production	
TUSCARAWAS COUNTY (continued)														
R & E Coal Co.	R & E Coal Co.	Jefferson	5 6	32 34	surface	strip auger  Total	13,945 111 14,056	100	truck	14,056	3	2	Ts 1925	
R & F Coal Co. Triad Mining, Inc.	Stevens Roemer Pit	Mill Fairfield	7 6	46 36	surface surface	strip strip auger  Total	49,139 39,499 13,571 55,070	71 216	truck truck	49,545 55,070	7 12	1 1	Ts-1931 Ts-1909	
Valley Mining, Inc.	Valley Mining	Clay	6	34	surface	strip auger  Total	43,379 28,261 71,640	155	truck	71,640	8	1	Ts-1933	
Zoar Mining Co.	Strip No. 1 Zoar	Rush Sandy	6 4	30	surface surface	strip strip  Total	8,642 7,350 71,640	121 2	truck truck	8,642 7,350	4	2	Ts-1923 Ts-540	
VINTON COUNTY — Total production = 1,640,128 tons														
Benedict, Inc.	Benedict	Elk	4 5 18	24 18	surface	strip	1,691	75	truck	1,691	2		Vn-165	
	Irelan Pit	Elk	3 4	36	surface	strip	37,779	217	truck	37,779	3	2	Vn-169	
	Benedict	Elk	4A	15	surface	strip	72,390	275	truck	72,390	6	2	Vn-654	
	Benedict Pines	Swan	4A	5	surface	strip	65,587	200	truck	65,587	6	3	Vn-13	
	Herrad Vanderford	Swan	4A, 5		surface	strip	16,311	275	truck	16,311	2	9	Vn-145	
Eberts Coal Co., Inc.	Quarry	Elk, Richland	4A, 5 4	60	surface	strip	25,825	96	truck	28,450 conveyor 2,226	11	4	Vn-163	
							31,676	Total						
Eberts, J. & E. Coal Co.	Clay Pit #2 Pit	Richland Clinton	3 3	36 24	surface surface	strip strip	1,404 57,543	160	truck truck	1,404 57,543	3 5	9	Vn-167 Vn-623	
Elk Coal Co., Inc. Quality Coal Co.	Elk Strip Jaymar Pit	Elk, Richland Clinton	3 3	36 28	surface surface	strip strip	43,516 319,918	207 179	truck truck	43,516 319,918	8 24	1	Vn-164 Vn-655	
			4 5	28 28										
Sands Hill Coal Co.	Sands Hill Strip	Clinton	3 4A 5 6 7	24 30 32 22 12	surface	strip	169,118	192	rail truck	12,194 156,924	26	9	Vn-641	
								Total		169,118				
Southern Ohio Coal Co. Swan Coal Co.	Raccoon Mine #3 Swan Pit	Wilkesville Brown, Swan	4A 4A	57 36	drift surface	cont. miner strip	768,139 60,907	168 166	rail truck	759,955 60,907	258	15	85 Vn-652 3 Vn-663	
WASHINGTON COUNTY — Total production = 267,484 tons														
B & N Coal, Inc.	Brooms Run	Aurelius	9	30	surface	strip auger  Total	245,353 22,131 267,484	177	truck	226,540	11	8	Wn-51	
WAYNE COUNTY — Total production = 53,974 tons														
Rodco, Inc. Salt Creek Corp.	Rodco #4 Roman Mast Pit	Salt Creek Paint	4 3	28 26	surface surface	strip strip	26,043 27,931	218	truck truck	26,043 27,931	4		We-19 We-18	

## 1983 OHIO DIRECTORY OF REPORTING LIMESTONE-MINE OPERATORS, BY COUNTY

## LIMESTONE OPERATORS DIRECTORY

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County	Name and address of operator	Name of mine or quarry	Township	Geological unit	Type and principal use	State mine number
Adams	Davon Inc. 4251 Rousch Rd. Hillsboro, OH 45133 Standard Slag Co. P.O. Box 1378 Youngstown, OH 44501	Plum Run Stone Div.  Adams  Bluffton Stone Co.	Meigs  Franklin  Richland	Pebbles, Greenfield, & Tymochtee Dolomites (Silurian)  Silurian  Tymochtee Dolomite (Silurian)	crushed stone—riprap, metallurgical stone, building, road base, resurfacing stone; aglime  crushed stone—riprap, stone for portland cement concrete, stone for bituminous concrete, building, road base, resurfacing stone  crushed stone—riprap, stone for portland cement concrete, stone for bituminous concrete, building, road base, resurfacing stone, farm, aglime	Ads-1  Ads-SS1  An-1
Allen	Bluffton Stone Co. P.O. Box 26 Bluffton, OH 45817 National Lime & Stone Co. 1st National Bank Bldg. Findlay, OH 45840 Suever Stone Co., Inc. P.O. Box 269 Delphos, OH 45833 Western Ohio Stone Co. Div. of Western Ohio Corp. P.O. Box 153 Lima, OH 45802	Lima Plant  Suever Stone Co., Inc.  Western Ohio Stone Co. Plant #1  Western Ohio Stone Co.	Monroe  Spencer  Bath  Bath	Silurian  Tymochtee Dolomite (Silurian)  Greenfield & Tymochtee Dolomites (Silurian)  Tymochtee Dolomite (Silurian)	crushed stone—riprap, building, road base, resurfacing stone, railroad ballast  crushed stone—stone for bituminous concrete, building, road base, resurfacing stone; aglime  crushed stone—stone for portland cement concrete, stone for bituminous concrete, building, road base, resurfacing stone, railroad ballast  crushed stone—stone for portland cement concrete, stone for bituminous concrete, building, road base, resurfacing stone; aglime	An-3  An-4  An-2  An-11
Athens	Diamond Stone Quarries, Inc. P.O. Box 66 Albany, OH 45710	Plant No. 1  Plant No. 2	Lee  Lee	Brush Creek limestone (Pennsylvanian)  Brush Creek limestone (Pennsylvanian)	crushed stone—building, road base, resurfacing stone  crushed stone—building, road base, resurfacing stone	As-532  As-533
Auglaize	Con-Ag Inc. Rte. 1, 66A North St. Marys, OH 45885 National Lime & Stone Co. 1st National Bank Bldg. Findlay, OH 45840	Con-Ag Inc.  Buckland Plant	Noble  Moulton	Cedarville Dolomite (Silurian)  Silurian	crushed stone—riprap, building, road base, resurfacing stone  crushed stone—riprap, building, road base, resurfacing stone; aglime	Ae-31  Ae-10
Belmont	Ayers Limestone Quarry, Inc. P.O. Box 67 Martins Ferry, OH 43935 Cravat Coal Co. 40580 Cadiz-Piedmont Rd. Cadiz, OH 43907	Ayers Limestone Quarry  Dover Pit  Brown County Rock Crusher	Pease  York  Lewis	Permian  Fishpot limestone (Pennsylvanian)  Ordovician	crushed stone—riprap, building, road base, resurfacing stone  crushed stone—building, road base, resurfacing stone  crushed stone—building, road base, resurfacing stone	Bt-716  Bt-119  Bn-1
Carroll	Brown County Highway Department Court House Georgetown, OH 45121 Puskarich Limestone Co. 40580 Cadiz-Piedmont Rd. Cadiz, OH 43907	Puskarich Limestone Co.	Lee	Pennsylvanian	crushed stone—riprap, building, road base, resurfacing stone	CJ-183

<sup>1</sup>No mine number has been assigned by the Division of Mines.



## 1983 OHIO DIRECTORY OF REPORTING LIMESTONE-MINE OPERATORS, BY COUNTY—Continued

County	Name and address of operator	Name of mine or quarry	Township	Geological unit	Type and principal use	State mine number
Clark	American Aggregates Corp. P.O. Drawer 160 Greenville, OH 45331	Springfield 223	Springfield	Cedarville Dolomite (Silurian)	crushed stone—building, road base, resurfacing stone	Ck-1
Clinton	Melvin Stone Co. 228 Melvin Rd. Wilmington, OH 45177	Melvin Stone Co.	Richland	Guelph Dolomite (Silurian)	crushed stone—riprap, stone for portland cement concrete, stone for bituminous concrete, building, road base, resurfacing stone; aglime	Cln-1
Crawford	National Lime & Stone Co. 1st National Bank Bldg. Findlay, OH 45840	Bucyrus Plant	Holmes	Devonian	crushed stone—riprap, building, road base, resurfacing stone, railroad ballast, fluxing stone; aglime	Cd-1
Darke	American Aggregates Corp. P.O. Drawer 160 Greenville, OH 45331	Fort Jefferson #424	Neave	Cedarville Dolomite (Silurian)	crushed stone—building, road base, resurfacing stone	Dke-1
Delaware	American Aggregates Corp. P.O. Drawer 160 Greenville OH 45331	Shawnee #225	Concord	Columbus & Delaware Limestones (Devonian)	crushed stone—building, road base, resurfacing stone	Del-4
	National Lime & Stone Co. 1st National Bank Bldg. Findlay, OH 45840	Delaware Plant	Scioto	Columbus & Delaware Limestones (Devonian)	crushed stone—riprap, building, road base, resurfacing stone, railroad ballast, fluxing stone; aglime	Del-5
Erie	Sandusky Crushed Stone Co., Inc. P.O. Box 527 Sandusky, OH 44870	Sandusky Crushed Stone Co., Inc.	Groton	Columbus & Delaware Limestones (Devonian)	crushed stone—riprap, stone for portland cement concrete, stone for bituminous concrete, building, road base, resurfacing stone, railroad ballast, other; aglime	Ee-11
Fayette	Wagner Quarries Co. 4203 Milan Rd. Sandusky, OH 44870	Soldiers Home Quarry	Perkins	upper Columbus & Delaware Limestones (Devonian)	crushed stone—building, road base, resurfacing stone	Ee-1
	American Aggregates Corp. P.O. Drawer 160 Greenville, OH 45331	Blue Rock Limestone 222	Perry	Tymochtee Dolomite (Silurian)	crushed stone—building, road base, resurfacing stone	Fe-2
	Sugar Creek Stone Quarry, Inc. P.O. Box 584 Washington Court House, OH 43160-0637	Sugar Creek Stone Quarry, Inc.	Perry, Union	Greenfield Dolomite (Silurian)	dimension stone	Fe-3
Franklin	American Aggregates Corp. P.O. Drawer 160 Greenville, OH 45331	Marble Cliff #224	Norwich	Columbus & Delaware Limestones (Devonian)	crushed stone—building, road base, resurfacing stone	Fn-2
		Columbus Limestone #221	Marion	Columbus Limestone (Devonian)	crushed stone—building, road base, resurfacing stone	Fn-53
Greene	American Aggregates Corp. P.O. Drawer 160 Greenville, OH 45331	Cedarville Limestone #423	Cedarville	Cedarville Dolomite (Silurian)	crushed stone—building, road base, resurfacing stone	Ge-17
	Southwestern Portland Cement Co. P.O. Box 191 Fairborn, OH 45324	Southwestern Portland Cement Co.	Bath	upper Brassfield Limestone (Silurian)	stone for portland cement manufacture	Ge-1
Hancock	National Lime & Stone Co. 1st National Bank Bldg. Findlay, OH 45840	Findlay Plant	Liberty	Silurian	crushed stone—riprap, building, road base, resurfacing stone, railroad ballast	Hk-1

	Pifer Stone Co. P.O. Box 101 Williamstown, OH 45897	Pifer Stone Co.	Madison	Tymochtee Dolomite (Silurian)	crushed stone—building, road base, resurfacing stone	Hk-4
	Tarbox-McCall Stone Co. Div. of Hancock Ready Mix, Inc. 852 Western Ave. Findlay, OH 45840	Tarbox-McCall Stone Co.	Liberty	Greenfield Dolomite (Silurian)	crushed stone—riprap, stone for portland cement concrete, stone for bituminous concrete, building, road base, resurfacing stone, railroad ballast	Hk-2
Hardin	Hardin Quarry Co. 12484 State Rte. 701 Kenton, OH 43326	Hardin Quarry Co.	Pleasant	Tymochtee Dolomite (Silurian)	crushed stone—riprap, building, road base, resurfacing stone; aglime	Hdn-2
	Standard Slag Co. P.O. Box 1378 Youngstown, OH 44501	Forest	Jackson	Silurian	crushed stone—stone for portland cement manufacture, building, road base, resurfacing stone	Hdn-1
Highland	Davon Inc. 4281 Rousch Rd. Hillsboro, OH 45133	Highland Stone Div.	Hamer	Brassfield & Dayton Limestones (Silurian)	crushed stone—riprap, metallurgical stone, building, road base, resurfacing stone; aglime	Hd-2
	Ohio Asphaltic Limestone Corp. 8591 Mad River Rd. Hillsboro, OH 45133	Ohio Asphaltic Limestone Corp.	Union		crushed stone—riprap, stone for bituminous concrete, building, road base, resurfacing stone; aglime	Hd-3
	Marshall Quarry, Inc. 11199 State Rte. 124 Hillsboro, OH 45133	Marshall Quarry, Inc.	Marshall		crushed stone—building, road base, resurfacing stone; aglime	Hd-4
Holmes	Belden Brick Co. P.O. Box 910 Canton, OH 44701	Shanesville Pit	Clark	Putnam Hill limestone (Pennsylvanian)	crushed stone—building, road base, resurfacing stone	Hs 520
	Holmes Limestone Co. P.O. Box 295 Berlin, OH 44610	Holmes 241 Plant	Hardy	Putnam Hill limestone (Pennsylvanian)	crushed stone—building, road base, resurfacing stone	Hs-67
Jackson	Waterloo Coal Co. P.O. Box 177 Oak Hill, OH 45656	Wayne Mine	Prairie	Putnam Hill limestone (Pennsylvanian)	crushed stone—building, road base, resurfacing stone	Hs-79
Lawrence	Brohard Mining & Development, Inc. Rte. 1 Box 6 Pedro, OH 45659	Brohard Mining & Development, Inc.	Madison	Vanport limestone (Pennsylvanian)	crushed stone—building, road base, resurfacing stone	Jkn-367
	Lawrence County Commissioners Ironton, OH 45638	Buck Creek Quarry	Elizabeth		crushed stone—riprap	Le-406
Logan	Connolly Construction Co., Inc. 1146 Delaware Rd. Marysville, OH 43040	East Liberty Quarry	Mason		crushed stone—riprap	Le-139
	C. E. Duff & Son, Inc. 9042 State Rte. 117 Huntsville, OH 43324	C. E. Duff & Son, Inc.	Perry		crushed stone—unspecified	Lgn-1
Lucas	Northwood Stone & Asphalt Co. 1558 Co. Rd. 105 Belle Center, OH 43310	Northwood Stone & Asphalt Co.	Richland	Tymochtee Dolomite (Silurian)	crushed stone—riprap, stone for land cement concrete, building, road base, resurfacing stone	Lgn-15
	France Stone Co. P.O. Box 1928 Toledo, OH 43603	Waterville	Richland	Tymochtee Dolomite (Silurian)	crushed stone—riprap, building, road base, resurfacing stone	Lgn-2
		Silica	Waterville		crushed stone—riprap, building, road base, resurfacing stone	Ls-1
		Maumee Stone Co.	Sylvania	Detroit River Group (Devonian)	crushed stone—riprap, building, road base, resurfacing stone	Ls-3
			Waynesfield		crushed stone—riprap, stone for port- land cement concrete, stone for bituminous concrete, building, road base, resurfacing stone, ice control	Ls-2

## 1983 OHIO DIRECTORY OF REPORTING LIMESTONE-MINE OPERATORS, BY COUNTY—Continued

County	Name and address of operator	Name of mine or quarry	Township	Geological unit	Type and principal use	State mine number
Lucas (cont)	SME Cement, Inc. P.O. Box 234 Middlebranch, OH 44652	Sylvania	Sylvania	Dundee Limestone (Devonian)	stone for portland cement manufacture	LS-5
Mahoning	Carbon Limestone Co. Div. of Pickands Mather & Co. Lowellville, OH 44436	Carbon Limestone Co. Div. of Pickands Mather & Co.	Poland	Vanport limestone (Pennsylvanian)	crushed stone—metallurgical stone, building, road base, resurfacing stone; aglime	Mg-507
	Honey Creek Stone Co. P.O. Box 296 Petersburg, OH 44454	Honey Creek Stone Co.	Springfield	Vanport limestone (Pennsylvanian)	crushed stone—building, road base, resurfacing stone	Mg-54
	Heiser Stone Co. P.O. Box 2491 North Canton, OH 44720	Heiser Stone Co.	Smith		crushed stone—building, road base, resurfacing stone	Mg-43
	SME Bessemer Cement, Inc. P.O. Box 790 Newcastle, PA 16103	Quarry #8	Poland	Vanport limestone (Pennsylvanian)	stone for portland cement manufacture	Mg-608
Marion	J. M. Hamilton & Sons Co. 1974 Marion-Bucyrus Rd. Marion, OH 43302	J. M. Hamilton & Sons Co.	Marion		crushed stone—stone for bituminous concrete, building, road base, resurfacing stone	Mn 2
	National Lime & Stone Co. 1st National Bank Bldg. Findlay, OH 45840	Marion Plant	Marion	Columbus & Delaware Limestones (Devonian)	crushed stone—riprap, building, road base, resurfacing stone, railroad ballast; aglime	Mn-3
	Tri County Limestone Co. 4664 Hardin-Marion Rd. N Kenton, OH 43326	Tri County Limestone Co.	Grand	Silurian	crushed stone—riprap, stone for port- land cement concrete, building, road base, resurfacing stone, other; aglime	Mn-1
	John W. Karch Stone Co. P.O. Box 357 Celina, OH 45822	John W. Karch Stone Co.	Jefferson	Silurian	crushed stone—riprap, stone for port- land cement concrete, building, road base, resurfacing stone; aglime	Mr-1
Mercer	Rockford Stone Co. 3491 U.S. Rte. 33 Rockford, OH 45882	Rockford Stone Co.	Dublin	Lockport & Guelph Dolomites (Silurian)	crushed stone—building, road base, resurfacing stone, leach-bed stone; aglime	Mr-2
	Armco, Inc. Piqua Minerals 1750 W. Statler Rd. Piqua, OH 45356	Piqua Minerals	Spring Creek	Brassfield Limestone, Dayton & Laurel Dolomites (Silurian)	crushed stone—riprap, metallurgical stone, building, road base, resurfacing stone, railroad ballast, fillers; aglime	Mi-1
	Gregory Stone Co., Inc. 3244 S. Davis Rd. Ludlow Falls, OH 45339	Gregory Quarry	Union		dimension stone	Mi-16
	Ludlow Stone, Inc. 3244 S. Davis Rd. Ludlow Falls, OH 45339	Ludlow Stone, Inc.	Union	Brassfield Limestone (Silurian)	crushed stone—riprap, building, road base, resurfacing stone; aglime	Mi-502
Miami	C. F. Poeppelman Sand & Stone, Inc. 4755 N. State Rte. 721 Bradford, OH 45308	C. F. Poeppelman, Inc.	Newberry	Cedarville Dolomite (Silurian)	crushed stone—riprap, stone for port- land cement concrete, stone for bituminous concrete, building, road base, resurfacing stone; aglime	Mi-10
	Lee Upton P.O. Box 6090 New Carlisle, OH 45344	New Carlisle Sand & Gravel	Bethel		crushed stone—aglime	Mi-501
	Gerald L. Christman 206 4th St. Woodsfield, OH 43793	Christman Quarry	Seneca		crushed stone—building, road base, resurfacing stone, other	Me-501
Monroe						



Montgomery	American Aggregates Corp. P.O. Drawer 160 Greenville, OH 45331	Phillipsburg Limestone #421	Clay	Cedarville Dolomite (Silurian)	My-1	crushed stone—building, road base, resurfacing stone
	Southwestern Portland Cement Co. 506 E. Xenia Dr. Fairborn, OH 45324	Dayton Limestone #420	Madison	Cedarville Dolomite (Silurian)	My-23	crushed stone—building, road base, resurfacing stone
	D & K Construction, Inc. P.O. Box 397 McConnellsville, OH 43756	Southwestern Portland Cement Co.	Wayne	upper Brassfield Limestone (Silurian)	My-58	stone for portland cement manufacture
Morgan		Central Ohio Coal Co. Mine	Manchester	Benwood limestone (Pennsylvanian)	Mon-600	crushed stone—building, road base, resurfacing stone
Muskingum	Chesterhill Stone Co. 773 E. State Rte. 60 NE McConnellsville, OH 43756	Fultonham Plant	Newton	Maxville Limestone (Mississippian)	Mum-106	crushed stone—riprap, metallurgical stone, stone for portland cement concrete, stone for bituminous concrete, building, road base, resurfacing stone; aglime
	Columbia Cement Corp. P.O. Box 1531 Zanesville, OH 43701	Lyle Quarry	Newton	Maxville Limestone (Mississippian)	Mum-24	stone for portland cement manufacture
	Sidwell Bros., Inc. 4620 Limestone Valley Rd. Zanesville, OH 43701	Jonathan Mine	Newton	Maxville Limestone (Mississippian)	Mum-91	stone for portland cement manufacture
		Sidwell Quarry	Newton	Maxville Limestone (Mississippian)	Mum-104	crushed stone—riprap, building, road base, resurfacing stone
Noble	King Quarries, Inc. 11300 State Rte. 340 Cumberland, OH 43732	Sidwell Quarry #2	Meigs, Rich Hill	Ewing limestone (Pennsylvanian)	Mum-896	crushed stone—building, road base, resurfacing stone
	Ed Kraemer & Sons, Inc. Bolander Rd. Clay Center, OH 43408	White Rock Quarry	Brookfield	Guelph Dolomite (Silurian)	Ne-106	crushed stone—building, road base, resurfacing stone
Ottawa	Maumee Stone Co. 221 Allen St. Maumee, OH 43537	Rocky Ridge	Allen		Oa-6	crushed stone—unspecified
	Standard Slag Co. P.O. Box 1378 Youngstown, OH 44501	Marblehead	Benton		Oa-14	crushed stone—riprap, stone for portland cement concrete, stone for bituminous concrete, building, road base, resurfacing stone, other
	United States Gypsum Co. 21880 W. State Rte. 163 Genoa, OH 43430	U.S. Gypsum Co.	Danbury	Columbus Limestone (Devonian)	Oa-7	crushed stone—riprap, stone for portland cement concrete, stone for bituminous concrete, building, road base, resurfacing stone
	France Stone Co. P.O. Box 1928 Toledo, OH 43603	Paulding	Clay	Silurian	Oa-1	crushed stone—building, road base, resurfacing stone; lime (burned stone)—building, chemical and industrial
Paulding	General Portland, Inc. Peninsular Portland Cement Div. P.O. Box 160 Paulding, OH 45879	Paulding Quarry	Crane	Tennile Creek Dolomite (Devonian)	Pg-7	crushed stone—riprap, building, road base, resurfacing stone; aglime
	Maumee Stone Co. 221 Allen St. Maumee, OH 43537	Auglaize	Crane	Detroit River Group & Dundee Limestone (Devonian)	Pg-1	crushed stone—building, road base, resurfacing stone; stone for portland cement manufacture
		Auglaize	Auglaize	Detroit River Group & Dundee Limestone (Devonian)	Pg-2	crushed stone—riprap, metallurgical stone, stone for portland cement concrete, stone for bituminous concrete, building, road base, resurfacing stone, ice control, aglime

## 1983 OHIO DIRECTORY OF REPORTING LIMESTONE-MINE OPERATORS, BY COUNTY—Continued

County	Name and address of operator	Name of mine or quarry	Township	Geological unit	Type and principal use	State mine number
Perry	Maxville Stone Co. 7957 State Rte. 6685 Logan, OH 43138	Maxville Stone Co.	Monday Creek	Maxville Limestone (Mississippian)	crushed stone—building, road base, resurfacing stone	Py-235
	Somerset Lime & Stone, Inc. Rte. 2 Somerset, OH 43783	Somerset Lime & Stone, Inc.	Hopewell	Maxville Limestone (Mississippian)	crushed stone—building, road base, resurfacing stone	Py-266
Pike	Latham Limestone, Inc. P.O. Box 51 Latham, OH 45646	Roger Quarry	Mifflin	Greenfield Dolomite (Silurian)	crushed stone—riprap, stone for portland cement concrete, building, road base, resurfacing stone, railroad ballast, aglime	Pke-13
	Wysong Stone Co. 5897 State Rte. 503 N Lewisburg, OH 45338	Wysong Stone Co.	Twin		crushed stone—riprap, building, road base, resurfacing stone; dimension stone	Pre-5
Putnam	Ottawa Stone Co., Inc. P.O. Box 27 Ottawa, OH 45875	Ottawa Stone Co.	Blanchard	Tymochtee Dolomite (Silurian)	unspecified	Pm-3
	Putnam Stone Co., Inc. 7053 Road M Ottawa, OH 45875	Putnam Stone Co.	Pleasant, Riley	Silurian	crushed stone—riprap, building, road base, resurfacing stone	Pm-2
Sandusky	France Stone Co. P.O. Box 1928 Toledo, OH 43603	Bellevue	City of Bellevue		crushed stone—riprap, building, road base, resurfacing stone; dimension stone	Sy-6
	Gotttron Bros. Co. 100 South Stone St. Fremont, OH 43420	Gotttron Bros. Co.	Sandusky	Silurian	crushed stone—stone for portland cement concrete, stone for bituminous concrete, building, road base, resurfacing stone, other	Sy-5
	Martin Marietta Chemicals Executive Plaza on II Hunt Valley, MD 21030	Woodville Quarry	Woodville	Guelph Dolomite (Silurian)	crushed stone—riprap, fluxing stone; lime (burned stone)—chemical and industrial, refractory	Sy-1
	Ohio Lime Co. 3964 Co. Rd. 41 Millersville, OH 43448	Plant #3	Jackson	Guelph Dolomite (Silurian)	crushed stone—berm stone, other; lime (burned stone)—chemical and industrial	Sy-4
Seneca	Steeley Resources, Inc. 128 E. Main St. Woodville, OH 43469	Ohio Lime Co.	Woodville	Silurian	crushed stone—metallurgical stone, building, road base, resurfacing stone; aglime; lime (burned stone)—chemical and industrial, refractory, other	Sy-8
	Basic Refractories Combustion Engineering P.O. Box 600 Bettsville, OH 44815	Maple Grove Works	Liberty	Silurian	crushed stone—building, road base, resurfacing stone; aglime; lime (burned stone)—refractory	Sa-2
	France Stone Co. P.O. Box 1928 Toledo, OH 43603	Bloomville	Bloom	Columbus & Delaware Limestones (Devonian)	crushed stone—riprap, building, road base, resurfacing stone; dimension stone; aglime	Sa-3
	Lintner & Luft, Inc. 2891 14th Ave. Columbus, OH 43219	Flat Rock	Thompson		crushed stone—riprap, building, road base, resurfacing stone; dimension stone; aglime	Sa-1
		Lintner & Luft, Inc.	Thompson		unspecified	Sa-8

Shelby	Miami River Stone Co. 1566 Miami River Rd. Sidney, OH 45365	Miami River Stone Co.	Orange	Cedarville Dolomite (Silurian)	crushed stone—riprap, building, road base, resurfacing stone, railroad ballast; aglime	Shy-17
	Sidney Sand & Gravel Co. P.O. Box 379 Sidney, OH 45365	Rock Run Quarry	Washington		crushed stone—riprap	Shy-16
	Spring Creek Gravel Co. 4723 Hardin-Wapak Dr. Sidney, OH 45365	Quarry	Clinton		crushed stone—building, road base, resurfacing stone	Shy-15
Stark	East Ohio Limestone Co. P.O. Box 25 Hartsville, OH 44632	East Ohio Limestone Co.	Lake	Putnam Hill limestone (Pennsylvanian)	crushed stone—building, road base, resurfacing stone; aglime	Sk-663
	Kohl Industries Rte. 4 New Philadelphia, OH 44662	Black Hawk Mine	Bethlehem, Pike	Putnam Hill & Vanport limestones (Pennsylvanian)	crushed stone—riprap, building, road base, resurfacing stone	Sk-217
	SME Cement, Inc. P.O. Box 234 Middlebranch, OH 44652	#3 Pit	Marlboro	Putnam Hill limestone (Pennsylvanian)	stone for portland cement manufacture	Sk-222
Tuscarawas	Belden Brick Co. P.O. Box 910 Canton, OH 44701	Belden Pit	Sugar Creek	Putnam Hill limestone (Pennsylvanian)	crushed stone—building, road base, resurfacing stone	Ts-1646
	Sugarcreek Clay & Limestone, Inc. P.O. Box 402 Sugarcreek, OH 44681	Sugarcreek Clay & Limestone	Sugar Creek		crushed stone—riprap, building, road base, resurfacing stone; dimension stone	Ts-162
Union	L. G. Rockhold & Sons, Inc. 28541 State Rte. 739 West Mansfield, OH 43358	L. G. Rockhold & Sons, Inc.	York		crushed stone—stone for portland cement concrete, building, road base, resurfacing stone; aglime	Un-1
	Union Aggregates Co. P.O. Box 178 Ostrander, OH 43061	Union Limestone Plant	Millcreek	Columbus Limestone (Devonian)	crushed stone—riprap, building, road base, resurfacing stone; aglime	Un-2
Van Wert	Delphos Quarries Co. P.O. Box 67 Delphos, OH 45833	Delphos Quarries Co.	Washington	Tymochtee Dolomite (Silurian)	crushed stone—riprap, stone for portland cement concrete, building, road base, resurfacing stone, other	Vt-1
	Maumee Stone Co. 221 Allen St. Maumee, OH 43537	Union Quarry #08	Union		crushed stone—riprap, stone for port- land cement concrete, stone for bituminous concrete, building, road base, resurfacing stone, ice control	Vt-3
	Ridge Township Quarry R.R. 1 Box 263 Van Wert, OH 45891	Ridge Township Quarry	Ridge	Tymochtee Dolomite (Silurian)	unspecified	Vt-7
Washington	Guernsey Limestone Co. P.O. Box 652 Marietta, OH 45750	Guernsey Limestone	Adams	Benwood & Uniontown limestones (Pennsylvanian)	crushed stone—building, road base, resurfacing stone	Wh-47
Williams	Maumee Stone Co. 221 Allen St. Maumee, OH 43537	Maumee Stone Co.	Superior		crushed stone—stone for portland cement concrete, stone for bituminous concrete, building, road base, resurfacing stone, other; aglime	Ws-6
	France Stone Co. P.O. Box 1928 Toledo, OH 43603	Custar	Milton		crushed stone—riprap, building, road base, resurfacing stone; aglime	Wd-5
Wood	MacRitchie Materials, Inc. P.O. Box 90 West Millgrove, OH 43467	MacRitchie Materials	Perry	Silurian	crushed stone—riprap, building, road base, resurfacing stone; dimension stone	Wd-1



## 1983 OHIO DIRECTORY OF REPORTING LIMESTONE-MINE OPERATORS, BY COUNTY—Continued

County	Name and address of operator	Name of mine or quarry	Township	Geological unit	Type and principal use	State mine number
Wood (cont)	Maumee Stone Co. 221 Allen St. Maumee, OH 43537	Maumee Stone Co.	Perrysburg		crushed stone—riprap, stone for portland cement concrete, stone for bituminous concrete, building, road base, resurfacing stone, ice control, aglime	Wd-6
Wyandot	Charles H. McCarthy Quarry 6326 Co. Rd. 61 Upper Sandusky, OH 43351 National Lime & Stone Co. 1st National Bank Bldg. Findlay, OH 45840	Maumee Stone Co.	Portage	Greenfield & Lockport Dolomites (Silurian)	crushed stone—stone for portland cement concrete, stone for bituminous concrete, building, road base, resurfacing stone, ice control, other	Wd-11
		Charles H. McCarthy Stone Quarry	Pitt	Bass Islands Group (Silurian)	crushed stone—building, road base, resurfacing stone	Wt-3
		Carey Plant	Crawford	Silurian	crushed stone—riprap, building, road base, resurfacing stone, railroad ballast, fluxing stone, aglime; lime (burned stone)—chemical and industrial	Wt-1
		Wyandot Dolomite, Inc. P.O. Box 126 Carey, OH 43316	Crawford	Greenfield & Guelph Dolomites (Silurian)	crushed stone—stone for portland cement concrete, stone for bituminous concrete, building, road base, resurfacing stone, railroad ballast, manufactured sand; aglime	Wt-8

1983 OHIO DIRECTORY OF LAKE ERIE AND MAUMEE RIVER  
SAND AND GRAVEL DREDGERS

Name and address of operator	Permitted dredging areas
Erie Sand & Steamship Co. Foot of Sasafraas St. Erie, PA 16507	Fairport, Vermilion-Lorain Inner, Vermilion-Lorain Outer
Osborne Materials Co. P.O. Box 217 Williams St. Grand River, OH 44045	Fairport, Vermilion-Lorain Inner, Vermilion-Lorain Outer
White Bros. Sand, Inc. 1845 Collingwood Blvd. Toledo, OH 43695	Maumee Bay, Maumee River

# 1983 OHIO DIRECTORY OF REPORTING SAND AND GRAVEL MINING OPERATORS, BY COUNTY

## SAND AND GRAVEL OPERATORS DIRECTORIES

County	Name and address of operator	Name of pit	Township	Geological unit	Type and principal use	State mine number
Allen	Rockport Sand & Gravel Co., Inc. 9215 Rock St. Columbus Grove, OH 45830	Pit #1	Monroe	glacial	sand—portland cement concrete gravel—building, filtration	An-14
Ashland	Charles Bucklew Sand & Gravel Co. 912 Co. Rd. 175 Polk, OH 44866	Pit #2	Monroe	glacial	sand—unspecified gravel—unspecified	An-R <sup>1</sup>
		Charles Bucklew	Jackson	glacial	sand—fill	Ald-3
	Alvin Keiffer Trucking Excavating 296 State Rte. 604 Polk, OH 44866	Dinsmore Pit	Jackson		sand—road construction, resurfacing gravel—road construction, resurfacing	Ald-12
	Ries Sand & Gravel 169 State Rte. 95 Jeromesville, OH 44840	Ries Sand & Gravel	Mohican	Pleistocene kame	sand—building, road construction, resurfacing, filtration gravel—building, road construction, resurfacing, filtration	Ald-9
	Simanton Sand Co. P.O. Box 387 Norwalk, OH 44857	Simanton Sand Co.	Montgomery	glacial	sand—portland cement concrete, building, road construction, resurfacing gravel—driveway use	Ald-11
Ashtabula	Young's Sand & Gravel Co. 689 State Rte. 39W Loudonville, OH 44842	Young's Sand & Gravel Co.	Green	glacial	sand—building, road construction, resurfacing, other gravel—building, road construction, resurfacing, other	Ald-7
	Frye Sand & Gravel Co. 3049 S. Denmark Rd. Dorset, OH 44032	Frye Sand & Gravel	Denmark		gravel—unspecified	Asa-10
	Janson Soil Service 1492 Mechanicsville Rd. Rock Creek, OH 44084	Janson Soil Service	Morgan		gravel—driveway use	Asa-14
	Nelson Sand & Gravel Co. Logan Drive Ashtabula, OH 44004	Nelson Sand & Gravel	Kingsville	glacial	sand—building, fill gravel—building, fill	Asa-11
	Skidmore & Chah, Inc. 2312 Aetna Rd. Ashtabula, OH 44004	Amboy Pit	Monroe		sand—fill gravel—fill	Asa-13
Athens	Athens Building Materials Co., Inc. 250 N. Columbus Rd. Athens, OH 45701	Kimberly Pit	York		sand—building gravel—building	As-1117
Auglaize	Lake Hope Asphalt, Inc. State Rte. 278 Box 38 Nelsonville, OH 45764	Lake Hope Asphalt, Inc.	York		sand—unspecified gravel—unspecified	As-1161
	Joseph Sand & Gravel Boundary Rd. Wapakoneta, OH 45895	Joseph Sand & Gravel	Union		gravel—fill	Ae-23
	National Lime & Stone Co. P.O. Box 120 Findlay, OH 45840	Wapak Sand & Gravel	Union	glacial	sand—portland cement concrete, building gravel—building, road construction, resurfacing	Ae-30 <sup>2</sup>
	Quality Ready Mix, Inc. R.R. 5 Box 12 Wapakoneta, OH 45895	Quality Pit	Pusheta		sand—unspecified gravel—unspecified	Ae-16

<sup>1</sup>No mine number has been assigned by the Division of Mines.  
<sup>2</sup>Operated by United Aggregates Co. during 2nd quarter 1983.

## 1983 OHIO DIRECTORY OF REPORTING SAND AND GRAVEL MINING OPERATORS, BY COUNTY—Continued

County	Name and address of operator	Name of pit	Township	Geological unit	Type and principal use	State mine number
Belmont	Tri-State Asphalt Products P.O. Box 160 Martins Ferry, OH 43935	Tri-State Asphalt Products	Mead	glacial	sand—portland cement concrete, bituminous concrete gravel—portland cement concrete, bituminous concrete, road construction, resurfacing	Bt-74
Butler	Aggregate Services, Inc. 2145 Sippys Lane Hamilton, OH 45013	Aggregate Services, Inc.	St. Clair	glacial outwash	sand—other gravel—building, road construction, resurfacing	Br-36
	American Materials Corp. P.O. Drawer 160 Greenville, OH 45331	Hamilton #710	St. Clair	glacial	sand—road construction, resurfacing gravel—road construction, resurfacing	Br-5
		Fairfield #711	Fairfield	glacial	sand—road construction, resurfacing gravel—road construction, resurfacing	Br-35
	Broshear Gravel Co. 2520 Millville-Ross Rd. Hamilton, OH 45013	Broshear Contractors, Inc.	Ross		gravel—road construction, resurfacing	Br-48
	Fairfield Sand & Gravel 3292 Mack Rd. Fairfield, OH 45014	Fairfield Sand & Gravel	St. Clair		sand—portland cement concrete, building gravel—building, portland cement concrete, road construction, resurfacing	Br-49
	Indian Creek Gravel Co. 4975 College Corner Pike Oxford, OH 45056	Indian Creek Sand & Gravel	Ross	Indian Creek	gravel—building, road construction, resurfacing, fill, other	Br-40
	Mecco, Inc. 2504 S. Main St. Middletown, OH 45042	Mecco, Inc.	Lemon	glacial outwash	sand—portland cement concrete, building gravel—building, portland cement concrete	Br-15
	Middletown Sand & Gravel Co. P.O. Box 368 Middletown, OH 45042	Middletown Sand & Gravel Co.	Lemon	Great Miami River	sand—bituminous concrete, building, road construction, resurfacing, other gravel—building, bituminous concrete, road construction, resurfacing, other	Br-1
	Moorman Sand & Gravel Co. 6127 Germantown Rd. Middletown, OH 45042	Moorman Sand & Gravel Co.	Madison		sand—building, fill gravel—building, road construction, resurfacing, fill	Br-6
	Watson Gravel, Inc. P.O. Box 277 Ross, OH 45061	Watson Pit	Fairfield		sand—portland cement concrete, building, fill gravel—building, portland cement concrete, road construction, resurfacing	Br-47
Carroll	Welch Sand & Gravel, Inc. 10217 Columbia St. Harrison, OH 45030-9751	Schlichter Pit and Mill-Five	Fairfield	glacial	sand—building gravel—building	Br-38
	National Aggregate P.O. Box 12322 Columbus, OH 43212	Malvern Plant	Brown		sand—building, road construction, resurfacing, filtration, unspecified gravel—road construction, resurfacing, unspecified	Cl-152
	Oneida Sand & Gravel, Inc. 8000 Blade Rd. Malvern, OH 44644	Oneida Sand & Gravel, Inc.	Brown		sand—road construction, resurfacing gravel—road construction, resurfacing	Cl-204



Champaign	American Aggregates Corp. P.O. Drawer 160 Greenville, OH 45331	Urbana #215	Urbana	glacial	sand—road construction, resurfacing gravel—road construction, resurfacing	Cpn-1
	D W Gravel 10677 Wren Rd. Mechanicsburg, OH 43044	D W Sand & Gravel	Union		sand—building, other gravel—building, other	Cpn-21
	Mechanicsburg Sand & Gravel, Inc. P.O. Box 18 Mechanicsburg, OH 43044	Mechanicsburg Sand & Gravel, Inc.	Union		sand—unspecified gravel—unspecified	Cpn-17
	Ralph Moore Excavating 2222 N. U.S. Rte. 68 Urbana, OH 43078	Moore's Excavating	Salem		sand—building gravel—building	Cpn-20
	American Aggregates Corp. P.O. Drawer 160 Greenville, OH 45331	Fairborn #413	Bethel	glacial	sand—road construction, resurfacing gravel—road construction, resurfacing	Ck-13
	County Line Sand & Gravel 659 W. County Line Rd. Springfield, OH 45504	County Line Sand & Gravel	Moorefield	Pleistocene glacial outwash	gravel—building, road construction, resurfacing, unspecified	Ck-27
	Woodrow C. Demmy 4324 Fairfield Pike Springfield, OH 45502	Demmy Sand & Gravel	Mad River	glacial	sand—building gravel—other	Ck-502
	Hilltop Basic Resources, Inc. 630 Vine St. Cincinnati, OH 45202	Enon Washed Sand & Gravel Co.	Bethel	Pleistocene glacial outwash	sand—building, road construction, resurfacing gravel—building, road construction, resurfacing, other	Ck-3
	Springfield Sand & Gravel Co. 4301 S. Charleston Pike Springfield, OH 45502	Fairborn Aggregate Plant  Springfield Sand & Gravel Co.	Bethel  Springfield	Pleistocene glacial outwash  Pleistocene glacial	sand—portland cement concrete, bituminous concrete, building gravel—building, portland cement con- crete, bituminous concrete, other  sand—portland cement concrete, bituminous concrete, road con- struction, resurfacing gravel—building, portland cement con- crete, bituminous concrete	Ge-4 <sup>3</sup>  Ck-25
	Kipps Gravel Co., Inc. 4987 State Rte. 222 Batavia, OH 45103	Kipp's Gravel Co., Inc.	Stonelick	glacial	sand—unspecified gravel—unspecified	Ct-7
Clermont	OKI Contracting, Inc. P.O. Box 92 Moscow, OH 45153	OKI Contracting, Inc.- Franklin Stone	Washington		sand—road construction, resurfacing	Ct-11
	Beaver Creek Sand & Gravel, Inc. 7219 Salem-Unity Rd. Salem, OH 44460	Beaver Creek Sand & Gravel, Inc.	Salem	glacial	sand—bituminous concrete, building gravel—building	Ca-855
	Neiheisel Sand & Gravel P.O. Box 255 Columbiana, OH 44408	Leetonia Pit & Mill	Fairfield	glacial	sand—building gravel—building	Ca-600
	X.L. Sand & Gravel P.O. Box 157 Negley, OH 44441	X.L. Sand & Gravel	Middleton	glacial	sand—portland cement concrete, build- ing, road construction, resurfacing gravel—building, portland cement con- crete, road construction, resurfacing, filtration	Ca-881
Coshocton	Apache Aggregate & Paving Co. 46626 Co. Rd. 495 Coshocton, OH 43812	Apache Aggregate & Paving Co.	Keene	Pleistocene	sand—road construction, resurfacing gravel—road construction, resurfacing	Cn-783

<sup>3</sup>See also Greene County.

## 1983 OHIO DIRECTORY OF REPORTING SAND AND GRAVEL MINING OPERATORS, BY COUNTY—Continued

County	Name and address of operator	Name of pit	Township	Geological unit	Type and principal use	State mine number
Coshocton (cont)	Boyd Gravel Co. 24270 Twp. Rd. 1202 Coshocton, OH 43812	Boyd Gravel Co.	Bethlehem	Pleistocene	sand—portland cement concrete, bituminous concrete, building, road construction, resurfacing gravel—building, portland cement concrete, road construction, resurfacing	Cn 694
	Spring Industries P.O. Box 507 New Philadelphia, OH 44663	Newcomerstown Plant	Oxford	Pleistocene glacial	sand—portland cement concrete, bituminous concrete, building gravel—portland cement concrete, bituminous concrete, road construction, resurfacing	Cn 624
Crawford	Gibson Sand & Gravel Co. 1385 Knorr Rd. Gallion, OH 44833	Gibson Sand & Gravel	Jefferson		sand—unspecified gravel—other	Cd-3
Cuyahoga	Silver Arrow Systems, Inc. 7730 Bond St. Solon, OH 44139	Silver Arrow Systems, Inc.	Glenwillow Sub-division		sand—other	Cya 26
Darke	American Aggregates Corp. P.O. Drawer 160 Greenville, OH 45331	Fort Jefferson #424	Neave	Cedarville	sand—road construction, resurfacing gravel—road construction, resurfacing	Dke-1
	Fourman's Sand & Gravel, Inc. R.D. 4 Greenville, OH 45331	Fourman's Sand & Gravel, Inc.	Greenville		sand—building, other gravel—building	Dke-4
	Hollinger Gravel Plant 1977 Royer Rd. New Madison, OH 45346	Hollinger Gravel Plant	Harrison		gravel—road construction, resurfacing, other	Dke-10
Defiance	Hillsdale Sand & Gravel, Inc. P.O. Box 223 Archbold, OH 43502	Hillsdale Sand & Gravel, Inc.	Farmer		gravel—road construction, resurfacing	De-2
Erie	Jarrett Sand Co. 6505 Skadden Rd. Sandusky, OH 44870	Jarrett Sand Co.	Groton		sand—other	Ee-29
	Keener Sand & Clay Co. 330 Dering Ave. Columbus, OH 43207	Huron Plant	Huron	Elkton beach ridge	sand—foundry	Ee-5
	Mesenburg Brothers, Inc. R.D. 1 Collins, OH 44826	Mesenburg Brothers, Inc.	Berlin		sand—other	Ee-24
	Ohio Foundry Sand Co. 330 Dering Ave. Columbus, OH 43207	Shinrock Plant	Berlin	Elkton beach ridge	sand—foundry	Ee-13
Franklin	American Aggregates Corp. P.O. Drawer 160 Greenville, OH 45331	Columbus #210	Marion	glacial	sand—road construction, resurfacing gravel—road construction, resurfacing	Fn-6
	J P Sand & Gravel Co. P.O. Box 2 Lockbourne, OH 43137	Lockbourne #213	Hamilton	glacial	sand—road construction, resurfacing gravel—road construction, resurfacing	Fn-23
	Masons Sand & Gravel Co. 2385 Rathmell Rd. Columbus, OH 43207	J P Sand & Gravel Co.	Hamilton		sand—building gravel—building	Fn-52
		Masons Sand & Gravel	Hamilton	glacial moraine	sand—building, other gravel—building	Fn-11

Fulton	Muskingum River Gravel Co. P.O. Box 14 Lockbourne, OH 43137	Plant #6	Hamilton			Fn-24	sand—portland cement concrete, bituminous concrete, building, filtration gravel—building, portland cement concrete, filtration
	Olen Corp. P.O. Box 161 Worthington, OH 43085	Olen Corp.	Brown		Pleistocene outwash	Fn-43	sand—building, road construction, resurfacing gravel—building, road construction, resurfacing
	Wapak Sand & Gravel Co. 711 Frank Rd. Columbus, OH 43223	Agg Rok	Franklin		Pleistocene	Fn-36	sand—portland cement concrete, bituminous concrete gravel—portland cement concrete, bituminous concrete
	Miller Brothers Construction, Inc. Rte. 1 Box 30 Archbold, OH 43502	Miller Brothers Construction, Inc.	Chesterfield			Fn-3	sand—road construction, resurfacing
Gallia	Gallia Aggregates & Construction 5347 U.S. Rte. 60 E. Huntington, WV 25705	Gallia Aggregates & Construction	Ohio			Ga-244	sand—unspecified gravel—road construction, resurfacing, unspecified
	Keener Sand & Clay Co. 330 Dering Ave. Columbus, OH 43207	Gallia Plant	Springfield		Minford silt/sand	Ga-507	sand—foundry
Greene	American Aggregates Corp. P.O. Drawer 160 Greenville, OH 45331	Xenia #414	Beaver Creek		glacial	Ge-33	sand—road construction, resurfacing gravel—road construction, resurfacing
	Hilltop Basic Resources, Inc. 630 Vine St. Cincinnati, OH 45202	Fairborn Aggregate Plant	Bath		Pleistocene glacial outwash	Ge-4 <sup>4</sup>	sand—portland cement concrete, bituminous concrete, building gravel—building, portland cement concrete, bituminous concrete, other
	Moraine Materials Co. 2500 E. River Rd. Dayton, OH 45439	Moraine Materials Co.	Beaver Creek			Ge-32	sand—building gravel—road construction, resurfacing
	Phillips Sand & Gravel P.O. Box 71 Alpha, OH 45301	Spring Valley Aggregates Phillips Sand & Gravel	Spring Valley Beaver Creek		glacial	Ge-38 <sup>5</sup> Ge-36	sand—unspecified gravel—unspecified sand—portland cement concrete, building, road construction, other resurfacing, filtration, other gravel—building, portland cement concrete, road construction, resurfacing, filtration, other
	S & W Cement Construction, Inc. 4119 Industrial Lane Dayton, OH 45430	S & W Cement Construction, Inc.	Xenia			Ge-39	sand—unspecified
	Xenia Sand, Gravel & Asphalt Paving Co. P.O. Box 10 Xenia, OH 45385	Xenia Sand, Gravel & Asphalt Paving Co.	Xenia			Ge-10	sand—bituminous concrete, building, road construction, resurfacing, filtration, other gravel—building, bituminous concrete, road construction, resurfacing, filtration
Hamilton	American Materials Corp. P.O. Drawer 160 Greenville, OH 45331	Harrison #712	Harrison		glacial	Hmn-37	sand—road construction, resurfacing gravel—road construction, resurfacing
		Kilby Rd. #713	Whitewater		glacial	Hmn-AMC <sup>6</sup>	sand—road construction, resurfacing gravel—road construction, resurfacing

<sup>4</sup>See also Clark County.<sup>5</sup>See also Warren County.<sup>6</sup>No mine number has been assigned by the Division of Mines.



## 1983 OHIO DIRECTORY OF REPORTING SAND AND GRAVEL MINING OPERATORS, BY COUNTY—Continued

County	Name and address of operator	Name of pit	Township	Geological unit	Type and principal use	State mine number
Hamilton (cont)	Ashcraft Sand & Gravel 5840 Dryfork Rd. Cleveland, OH 45002	Ashcraft Sand & Gravel	Whitewater	glacial	gravel—building	Hmn-54
	Barrett Paving Materials, Inc. 9570 State Rte. 128 Harrison, OH 45030	Barrett Paving Materials, Inc.	Crosby	Great Miami River	sand—other gravel—unspecified	Hmn-44
	Bunnell Sand & Gravel 5897 State Rte. 128 Cleveland, OH 45002	James Bunnell, Inc.	Harrison	glacial	gravel—other	Hmn-50
	Eaton Sand & Gravel Co., Inc. 1075 Eaton Dr. Covington, KY 41074	James Bunnell, Inc.	Whitewater	glacial	sand—other gravel—other	Hmn-52
	Hornsby Sand & Gravel Co. 7450 Dryfork Rd. Cleveland, OH 45002	Eaton Sand & Gravel, Inc.	Miami		sand—bituminous concrete, unspecified gravel—bituminous concrete, unspecified	Hmn-46
	Queen City Gravel Co. 5050 Orchard St. Cincinnati, OH 45212	Hornsby Sand & Gravel, Inc.	Whitewater	Dry Fork Creek	sand—building gravel—building	Hmn-45
	George L. Rack, Inc. 5175 Este Ave. Cincinnati, OH 45232	Queen City Gravel Co.	Miami		gravel—other	Hmn-16
	T. J. Sand & Gravel 7450 Dryfork Rd. Cleveland, OH 45002	George L. Rack, Inc.	Mill Creek		sand—other	Hmn-10
	Three Rivers Sand & Gravel, Inc. 400 Cooper Ave. Cleveland, OH 45002	T. J. Sand & Gravel	Whitewater	Dry Fork Creek	sand—bituminous concrete, road construction, resurfacing gravel—building	Hmn-58
	Watson Gravel, Inc. P.O. Box 277 Ross, OH 45061	Three Rivers Sand & Gravel, Inc.	Miami	Great Miami River	gravel—other	Hmn-28
	Welch Sand & Gravel, Inc. 10217 Columbia St. Harrison, OH 45030-9751	Harrison Pit	Whitewater		sand—road construction, resurfacing, other gravel—building	Hmn-WG17
		Fernald Pit-Seven	Crosby	glacial	sand—building gravel—building	Hmn-42
		East Miami Pit & Mill-Two	Colerain	Great Miami River	sand—building gravel—building	Hmn-48
		Hooven Pit-Three	Whitewater	glacial	sand—building gravel—building	Hmn-49
Henry	Gerken Materials, Inc. P.O. Box 607 Napoleon, OH 45345	Gerken Materials, Inc.	Liberty	Maumee River	sand—building, road construction, resurfacing	Hy-5
Highland	Ohio Asphaltic Limestone Corp. 8591 Mad River Rd. Hillsboro, OH 45133	Ohio Asphaltic Limestone Corp.	Union		gravel—road construction, resurfacing	Hd-3
Hocking	Hocking County Engineer Court House Logan, OH 43138-1286	Hocking Co. Gravel Pit	Green	glacial outwash	sand—road construction, resurfacing gravel—road construction, resurfacing	Hg-296

Hocking Valley Concrete 35255 Hocking Dr. Logan, OH 43138	Hocking Valley Concrete Plant #8	Green	Pleistocene glacial outwash	sand—portland cement concrete, building, road construction, re- surfacing, filtration, other gravel—building, portland cement concrete, road construction, re- surfacing, filtration, other	Hg-262
Muskingum River Gravel Co. P.O. Box 671 Zanesville, OH 43701	Muskingum River Gravel Plant #8	Starr		sand—bituminous concrete, building, road construction, resurfacing gravel—building, bituminous concrete, road construction, resurfacing	Hg-301
Bros. Sand & Gravel Co. P.O. Box 173 Millsburg, OH 44654	Bros. Sand & Gravel Co.	Hardy		sand—road construction, resurfacing gravel—road construction, resurfacing	Hs-82
Feikert Sand & Gravel Co. R.D. 5 Box 365 Millsburg, OH 44654	Feikert Sand & Gravel Co.	Salt Creek	Pleistocene	sand—portland cement concrete, building, road construction, resurfacing, filtration, other gravel—building, portland cement concrete, road construction, resurfacing, filtration, other	Hs-511
Montgomery Sand Co. Rte. 1 Plymouth, OH 44865	Montgomery Sand Co.	New Haven		sand—other	Hrn-9
Price Companies, Inc. 115 Jefferson St. Norwalk, OH 44857	Price Sand and Gravel Pit #1	Norwalk	Pleistocene	sand—building, road construction, resurfacing, filtration gravel—building, road construction, resurfacing	Hrn-1
Fredericktown Sand & Gravel Co. P.O. Box 112 Fredericktown, OH 43019	Fredericktown Sand & Gravel Co.	Middlebury	Kokosing River	sand—road construction, resur- ing, unspecified gravel—road construction, resur- facing, unspecified	Kx-13
Goodwin Sand & Gravel, Inc. 125 S. Norton St. Mt. Vernon, OH 43050	Goodwin Sand & Gravel, Inc.	Clinton	glacial	sand—road construction, resur- facing, unspecified gravel—building, portland cement concrete, road construction, resurfacing, unspecified	Kx-7
Homestead Gravel Co. 21940 Wally Rd. Glenmont, OH 44628	Homestead Gravel Co.	Jefferson	Pleistocene outwash	sand—bituminous concrete, building gravel—building, road construction, resurfacing	Kx-14
Kokosing Materials, Inc. P.O. Box 122 Fredericktown, OH 43019	Fredericktown Plant #1	Morris	lake	sand—unspecified gravel—unspecified	Kx-16
Purdy Sand & Gravel Co. P.O. Box 667 Mt. Vernon, OH 43050	Purdy Sand & Gravel Co.	Clinton	Pleistocene valley train	sand—building, road construction, resurfacing, unspecified gravel—building, road construction, resurfacing, unspecified	Kx-3
Small's Sand & Gravel Co., Inc. 20420 Zion Rd. P.O. Box 617 Gambier, OH 43022	Small's Sand & Gravel Co., Inc.	College		sand—building, unspecified gravel—unspecified	Kx-8
R. W. Sidley, Inc. 7123 Madison Rd. Thompson, OH 44086	Small's Sand & Gravel Co., Inc. Painesville Plant	Harrison		sand—unspecified	Kx-15
B & L Utility Contractors, Inc. P.O. Box 174 South Point, OH 45680	B & L Contractors, Inc.	Painesville	Pleistocene glacial	sand—building gravel—building, portland cement concrete	Lke-7
		Perry		sand—other	Le-430

No mine number has been assigned by the Division of Mines.

## 1983 OHIO DIRECTORY OF REPORTING SAND AND GRAVEL MINING OPERATORS, BY COUNTY—Continued

County	Name and address of operator	Name of pit	Township	Geological unit	Type and principal use	State mine number
Lawrence (cont)	Brohard Mining & Development, Inc. Rte. 1 Box 6 Pedro, OH 45659	Brohard Mining & Development, Inc.	Elizabeth		sand—foundry	Le-406
	Burlington Sand & Gravel Co. P.O. Box 389 Chesapeake, OH 45619	Burlington Sand & Gravel	Perry		sand—other	Le-426
Licking	Alexandria Materials Co. P.O. Box 6 Alexandria, OH 43001	Alexandria Pit	St. Albans	Vanatia terrace	sand—building gravel—road construction, resurfacing	Lg-8
	American Aggregates Corp. P.O. Drawer 160 Greenville, OH 45331	Newark #214	Newark	glacial	sand—road construction, resurfacing gravel—road construction, resurfacing	Lg-2
	Dry Creek Crushed Gravel Co. 2097 Mt. Vernon Rd. Newark, OH 43055	Dry Creek Gravel Co.	Newton	Dry Creek	sand—unspecified gravel—unspecified	Lg-7
	Dry Creek Sand & Gravel Co. 2097 Mt. Vernon Rd. Newark, OH 43055	Dry Creek Sand & Gravel Co.	Newton, Washington	glacial	sand—unspecified gravel—unspecified	Lg-31
	Van Wey Sand & Gravel, Inc. 6824 Mt. Vernon Rd. NE Newark, OH 43055	Van Wey Sand & Gravel, Inc.	Newton	glacial	sand—foundry, building gravel—building, road construction, resurfacing	Lg-10
Logan	C. E. Duff & Son, Inc. 9042 State Rte. 117 Huntsville, OH 43324	Duff Sand	Washington		sand—portland cement concrete, building	Lgn-31
	Johnson Gravel Co. P.O. Box 122 Bellevue, OH 43311	Johnson Gravel Co.	Liberty		gravel—unspecified	Lgn-26
	Miller Brothers Construction, Inc. Rte. 1 Box 30 Archbold, OH 43502	Miller Brothers Construction, Inc.	Monroe		gravel—road construction, resurfacing	Lgn-32
	Neer's Engineering Labs 4859 Twp. Rd. 45 Bellevue, OH 43311	Neer's Engineering Labs	Union	Pleistocene kame	sand—unspecified gravel—unspecified	Lgn-6
Lorain	Belu & Son Paving, Inc. 4900 French Creek Rd. Loran, OH 44054	Belu Sand Pit	Henrietta		sand—other	Ln-12
Lucas	Maumee Haulers, Inc. 1416 Albion Rd. Holland, OH 43528	Nebraska Pit Eber Rd. Pit	Springfield Springfield		sand—building sand—building	LS-20 LS-MHI <sup>18</sup>
	Parker Sand & Stone, Inc. 1750 S. Eber Rd. (B) Holland, OH 43528	Rte. 295 Pit	Swanton		sand—building	LS-21
	Seaway Sand & Stone, Inc. 2190 Whitehouse-Spencer Rd. Swanton, OH 43558	Seaway Sand & Stone	Swanton		sand—building, road construction, resurfacing	LS-13
Mahoning	Neiheisel Sand & Gravel P.O. Box 255 Columbiana, OH 44408	Neiheisel Sand & Gravel	Green	glacial	sand—building gravel—building	Mg-NSG <sup>18</sup>



Marion	Fleming Construction Co. P.O. Box 31 Marion, OH 43302	Fleming Construction Co.	Prospect	Pleistocene	sand—unspecified	Mn-16
	Union Aggregates Co. 8328 Watkins Rd. Ostrander, OH 43061	Prospect Plant	Prospect		sand—building, road construction, resurfacing gravel—other	Mn-10
		Green Camp Plant	Pleasant		sand—building gravel—other	Mn-12
Medina	Baker Sand, Inc. 9857 Friendsville Rd. Burbank, OH 44214	Baker Sand, Inc.	Westfield, Harrisville	Pleistocene kames	sand—road construction, resurfacing gravel—road construction, resurfacing	Ma-4
		Baker Sand, Inc.	Westfield	Pleistocene kames	sand—building, road construction, resurfacing, other gravel—building, road construction, resurfacing	Ma-20
	Seville Sand & Gravel, Inc. P.O. Box 54 Seville, OH 44273	Seville Sand & Gravel, Inc.	Harrisville		sand—portland cement concrete, bituminous concrete, building, filtration, unspecified gravel—building, road construction, resurfacing	Ma-22
Meigs	Vivian Humphrey P.O. Box 128 Reedsville, OH 45772	Vivian Humphrey	Olive	Ohio River	gravel—road construction, resurfacing, other	Ms-295
	Meigs County Commissioners Rte. 2 Pomeroy, OH 45769	Meigs County Board of Commissioners	Letart		sand—road construction, resurfacing gravel—road construction, resurfacing	Ms-301
	Richards & Son, Inc. P.O. Box 292 Pomeroy, OH 45769	Richards & Son, Inc.	Letart	Ohio River terrace	sand—bituminous concrete, building gravel—building, bituminous concrete, road construction, resurfacing	Ms-298
	Weber Sand & Gravel P.O. Box 116 Reedsville, OH 45772	Weber Sand & Gravel	Olive		sand—road construction, resurfacing gravel—road construction, resurfacing	Ms-287
Miami	Eldean Gravel Co. P.O. Box 440 Tipp City, OH 45371	Eldean Gravel Co.	Concord		sand—unspecified gravel—unspecified	Mi-2
	Ernst Gravel Co. R.D. 1 Piqua, OH 45356	Ernst Gravel Co.	Spring Creek		sand—building, road construction, resurfacing, filtration, unspecified gravel—building, road construction, resurfacing, filtration, unspecified	Mi-6
	New Carlisle Gravel Co. 6090 South Scarff Rd. New Carlisle, OH 45344	New Carlisle Sand & Gravel	Bethel		sand—unspecified	Mi-501
	C. F. Poeppelman Sand & Stone, Inc. 4755 N. State Rte. 721 Bradford, OH 45308	C. F. Poeppelman, Inc.	Newberry		gravel—unspecified	Mi-10
	Troy Gravel Co. P.O. Box 440 Tipp City, OH 45371	Troy Gravel Co.	Concord		sand—portland cement concrete, building, unspecified gravel—building, portland cement concrete, unspecified	Mi-3
	Valley Gravel Co. 7875 Old Canal Rd. Tipp City, OH 45371	Valley Gravel Co.	Monroe		sand—portland cement concrete, building, unspecified gravel—building, portland cement concrete, unspecified	Mi-8
	John Wise Gravel Co. 8535 W. Klinger Rd. Covington, OH 45318	Wise Gravel	Newberry	Pleistocene	sand—unspecified gravel—building, other	Mi-9

\*No mine number has been assigned by the Division of Mines.

## 1983 OHIO DIRECTORY OF REPORTING SAND AND GRAVEL MINING OPERATORS, BY COUNTY—Continued

County	Name and address of operator	Name of pit	Township	Geological unit	Type and principal use	State mine number
Miami (cont)	Woodville Concrete Corp. 7131 W. Fenner Rd. Ludlow Falls, OH 45339	Woodville Concrete Corp.	Newton	Pleistocene glacial	sand—portland cement concrete, building, road construction, resurfacing gravel—building, portland cement concrete, road construction, resurfacing	MI-4
Montgomery	American Aggregates Corp. P.O. Drawer 160 Greenville, OH 45331	Rip Rap Road #416	Wayne (City of Dayton)	glacial	sand—road construction, resurfacing gravel—road construction, resurfacing	My-66
	Broadway Sand & Gravel 2000 Sandridge Dr. Dayton, OH 45439	Dayton South #412	City of Moraine	glacial	sand—road construction, resurfacing gravel—road construction, resurfacing	My-33
	Englewood Sand and Gravel 501 E. Wenger Rd. Englewood, OH 45322	Broadway Sand & Gravel	City of Moraine	glacial	sand—building gravel—building	My-65
	Englewood Sand and Gravel 501 E. Wenger Rd. Englewood, OH 45322	Englewood Sand and Gravel	Butler		gravel—road construction, resurfacing, unspecified	My-64
	Haas Gravel Co. 405 E. Wenger Rd. Englewood, OH 45322	Englewood Sand and Gravel	Randolph		sand—portland cement concrete gravel—portland cement concrete	My-5
	Hilltop Basic Resources, Inc. 630 Vine St. Cincinnati, OH 45202	Haas Gravel Co.	Butler		gravel—building	My-30
	Miller Bros. Sand & Gravel, Inc. 7900 S. Kessler Frederick Rd. Tipp City, OH 45371	W. Carrollton Aggregate Plant	Jefferson, Miami	Pleistocene outwash	sand—portland cement concrete, bituminous concrete gravel—building, portland cement concrete, bituminous concrete, other	My-19
	Moraine Materials Co. 2500 E. River Rd. Dayton OH 45439	Miller Bros. Gravel, Inc.	Butler	Pleistocene glacial	sand—portland cement concrete, building, other gravel—building, portland cement concrete, bituminous concrete, road construction, resurfacing, filtration, other	My-52
	Northmont Sand & Gravel Co. P.O. Box 185 Englewood, OH 45322	Moraine Materials Co.	City of Moraine		sand—building, road construction, resurfacing, unspecified gravel—building, road construction, resurfacing, unspecified	My-29
	Partin Sand and Gravel 4252 Taylorsville Rd. Dayton, OH 45424	Northmont Sand & Gravel Co.	Randolph	glacial	sand—building gravel—building	My-49
	Tipp Sand & Gravel Co. P.O. Box 367 Troy, OH 45393	Partin Sand and Gravel	Wayne		gravel—other	My-55
	Weidle Sand & Gravel, Inc. P.O. Box 247 Germantown, OH 45327	Tipp Sand & Gravel Co.	Butler		gravel—building	My-61
	Chesterhill Stone Co. 773 East State Rte. 60 NE McConnellsville, OH 43756	Weidle Sand & Gravel Co.	German	glacial	sand—building gravel—building	My-41
Morgan		Stockport Plant	Windsor	Pleistocene glacial outwash	sand—portland cement concrete, bituminous concrete, building, road construction, resurfacing gravel—building, portland cement concrete, bituminous concrete, road construction, resurfacing	Mon-588

Morrow	Chesterville Sand & Gravel Co., Inc. P.O. Box 51 Chesterville, OH 43317	Chesterville Sand & Gravel Co., Inc.	Chester	glacial	sand—building, road construction, resurfacing gravel—building, road construction, resurfacing, filtration, other	Mw-10
Muskingum	Muskingum River Gravel Co. P.O. Box 671 Zanesville, OH 43701	Muskingum River Gravel Plant #1	Wayne		sand—bituminous concrete, building gravel—building, bituminous concrete, road construction, resurfacing	Mum-736
	Salt Creek Materials 880 Spry Rd. Zanesville, OH 43701	Muskingum River Gravel Plant #4 Salt Creek Materials	Muskingum		gravel—building	Mum-786
			Madison		sand—unspecified gravel—unspecified	Mum-216
Pickaway	Raleigh Spradlin Gravel Co. 622 Swackhammer Rd. Circleville, OH 43113	Salt Creek Materials	Perry		sand—unspecified gravel—unspecified	Mum-220
	Sturm & Dillard Co. P.O. Box 107 Circleville, OH 43113	John N. Bowers Pit	Circleville		gravel—building, unspecified	Pky-2
Pike	Chattin Concrete 9978 State Rte. 220 Waverly, OH 45690	Sturm & Dillard Co.	Circleville	glacial	sand—unspecified gravel—unspecified	Pky-1
	Standard Slag Co. 1200 Starnbaugh Bldg. Youngstown, OH 44501	Chattin Concrete	Seal		sand—portland cement concrete, building gravel—building, filtration	Pke-23
Portage	Beck Sand & Gravel Co. 2820 Webb Rd. Ravenna, OH 44266	Cutlip	Scioto	Pleistocene glacial outwash	sand—portland cement concrete, bituminous concrete, building gravel—building, portland cement concrete, bituminous concrete, road construction, resurfacing	Pke-24
	Brimfield Sand & Gravel 1765 Far View Akron, OH 44312	Beck Sand & Gravel, Inc.	Shalersville	glacial moraine	sand—unspecified gravel—unspecified	Pe-50
	Karl Brugmann 8488 Weaver Rd. Ravenna, OH 44266	Brimfield Sand & Gravel	Brimfield		sand—building, other	Pe-80
	Brugmann Sand & Gravel, Inc. 3828 Dudley Rd. Mantua, OH 44255	Karl Brugmann Sand & Gravel	Shalersville		sand—building gravel—building	Pe-15
	R. A. Cruise Sand & Gravel, Inc. 7639 Cleveland Rd. Ravenna, OH 44266	Oscar Brugmann Sand & Gravel, Inc.	Shalersville		sand—unspecified gravel—unspecified	Pe-9
	Hilltop Sand & Gravel Co. P.O. Box 422 Kent, OH 44240	R. A. Cruise Sand & Gravel	Ravenna	kame & esker	sand—building, road construction, resurfacing, unspecified gravel—building, unspecified	Pe-45
		Hilltop Sand & Gravel	Suffield	Pleistocene kame	sand—foundry, portland cement concrete, bituminous concrete, building, road construction, resurfacing, filtration, unspecified gravel—building, portland cement concrete, bituminous concrete, road construction, resurfacing, filtration, unspecified	Pe-56
	Warner L. Hughes, Inc. 2375 Waterloo Rd. Suffield, OH 44261	Hughes Pit	Suffield	Pleistocene	sand—other	Pe-76
	Hugo Sand Co. 7055 State Rte. 43 Kent, OH 44240	Hugo Sand Co.	Franklin	Pleistocene glacial	sand—building, road construction, resurfacing, unspecified gravel—building, road construction, resurfacing, unspecified	Pe-10



## 1983 OHIO DIRECTORY OF REPORTING SAND AND GRAVEL MINING OPERATORS, BY COUNTY—Continued

County	Name and address of operator	Name of pit	Township	Geological unit	Type and principal use	State mine number
Portage (cont)	Jefferson Materials Co. 8505 State Rte. 14 Kent, OH 44240	Howitt Plant	Streetsboro	glacial	sand—bituminous concrete, road construction, resurfacing gravel—building, bituminous concrete, other	Pe-63
	Karg Sand & Gravel Co. 963 Tallmadge Rd. Kent, OH 44240	Karg Sand & Gravel Co.	Brimfield		sand—other gravel—other	Pe-77
	Lakeside Sand & Gravel Co. 3431 Frost Rd. Mantua, OH 44255	Lakeside Sand & Gravel	Shalersville	Pleistocene glacial	sand—portland cement concrete gravel—building	Pe-40
	Lucky Sand & Gravel Co. 12018 Frost Rd. Mantua, OH 44255	Lucky Sand & Gravel Co.	Mantua	Pleistocene kame	sand—portland cement concrete, building, road construction, resurfacing, other gravel—building, road construction, resurfacing, filtration, other	Pe-75
	Miller Sand & Gravel Rte. 2 Box 60 Windham, OH 44288	Miller Sand & Gravel	Windham	Pleistocene glacial	sand—building, road construction, resurfacing, other gravel—building, road construction, resurfacing, unspecified	Pe-39
	Schloss Paving Co. 13700 McCracken Rd. Cleveland, OH 44125	Schloss Paving Co.	Mantua	Pleistocene	sand—bituminous concrete gravel—bituminous concrete	Pe-60
	Solon Sand & Gravel Co. 3583 Frost Rd. Mantua, OH 44255	Solon Exc. Sand & Gravel, Inc.	Shalersville		sand—building gravel—building	Pe-36
	Standard Slag Co. 1200 Stambaugh Bldg. Youngstown, OH 44501	Shalersville	Shalersville	Pleistocene glacial outwash	sand—portland cement concrete, bituminous concrete gravel—building, portland cement concrete, bituminous concrete	Pe-68
	Terra Vista Estates, Inc. 11201 Tinkers Creek Rd. Cleveland, OH 44125	Sand Pit Products	Shalersville	Pleistocene	sand—building, other gravel—building, unspecified	Pe-64
	Twin Lakes Sand, Inc. 2307 State Rte. 303 Streetsboro, OH 44240	Twin Lakes Sand, Inc.	Shalersville		sand—road construction, resurfacing gravel—road construction, resurfacing	Pe-59
		Twin Lakes Sand, Inc.	Streetsboro		sand—road construction, resurfacing gravel—road construction, resurfacing	St-32
		Camden Plant	Somers		sand—portland cement concrete, building, road construction, resurfacing gravel—building, portland cement concrete, road construction, resurfacing	Pre-4
	Wysong Gravel Co. 5040 Wolfe Creek Pike Dayton, OH 45426	West Alexandria Plant	Twin		sand—portland cement concrete, road construction, resurfacing gravel—building, portland cement concrete, road construction, resurfacing	Pre-6
	D. H. Bowman & Sons, Inc. State Rte. 97 Bellville, OH 44813	D. H. Bowman & Sons	Jefferson	Pleistocene glacial outwash	sand—bituminous concrete, other gravel—building, bituminous concrete, road construction, resurfacing, other	Rd-4
Preble						
Richland						

Derwacter Sand & Gravel R.D. 2 Spayde Rd. Belville, OH 44813	Derwacter Sand & Gravel	Jefferson	Pleistocene glacial	sand—portland cement concrete, bituminous concrete, building, other gravel—building, road construction, resurfacing, filtration	Rd-9
John L. Garber Materials Co. R.D. 8 Box 246 Lexington, OH 44904	J. L. Garber Materials, Inc.	Troy		sand—building, foundry gravel—building	Rd-14
Mohican Sand & Gravel Co. P.O. Box 28 Perryville, OH 44864	Lucas Pit & Mill	Monroe		sand—building, road construc- tion, resurfacing gravel—building, road construc- tion, resurfacing, other	Rd-5
J. J. Scott Company 153 N. Gambel Shelby, OH 44875	Ganges Gravel	Cass		gravel—building	Rd-18
Brewer & Brewer Materials, Inc. P.O. Box 88 Chillicothe, OH 45601	Brewer & Brewer Mtls. N-3	Union	Pleistocene glacial	sand—portland cement concrete, bituminous concrete, building, road construction, resurfacing, other gravel—building, portland cement concrete, bituminous concrete, road construction, resurfacing, other	Rs-19
Lyle Fuller R.D. 1 Frankfort, OH 45628	Fuller Gravel	Concord		gravel—building	Rs-21
Miami Gravel Co. R.D. 2 Chillicothe, OH 45601	Muskingum River Gravel Plant #7	Liberty		sand—bituminous concrete, building, road construction, resurfacing gravel—building, bituminous concrete, road construction, resurfacing	Rs-4
Morrison Gravel Co. 4462 Higby Rd. Chillicothe, OH 45602	Morrison Sand & Gravel	Franklin	glacial	gravel—other	Rs-12
Whitehall Farms, Inc. P.O. Box 335 Green Springs, OH 44836	Whitehall Farms	Green Creek		sand—other	Sy-18
Monroe Cunningham P.O. Box 202 Wheetersburg, OH 45694	Cunningham Pit	Porter		sand—unspecified gravel—unspecified	So-83
Earl H. Schilling & Son R.D. 2 Box 326 Ironton, OH 45638	Earl H. Schilling & Son Sand & Gravel	Green		sand—other	So-78
Standard Slag Co. 1200 Stambaugh Bldg. Youngstown, OH 44501	Haverhill	Green	alluvial plain	sand—portland cement concrete, bituminous concrete, building gravel—building, bituminous concrete, road construction, resurfacing, filtration, unspecified	So-79
Wright Sand 3632 State Rte. 231 Tiffin, OH 44883	Wright Sand Pit	Eden		sand—other gravel—other	Sa-11
Ernst Gravel Co. R.D. 1 Piqua, OH 45356	Ernst Gravel Co.	Lorain		sand—building, road construction, resurfacing, unspecified gravel—building, road construction, resurfacing, unspecified	Shy-1
Ferd J. Fleckenstein 11251 State Rte. 66 Minster, OH 45865	Ferd J. Fleckenstein	McLean		gravel—other	Shy-12

## 1983 OHIO DIRECTORY OF REPORTING SAND AND GRAVEL MINING OPERATORS, BY COUNTY—Continued

County	Name and address of operator	Name of pit	Township	Geological unit	Type and principal use	State mine number
Shelby (cont.)	Miami River Stone Co. 1556 Miami River Rd. Sidney, OH 45365	Miami River Stone	Orange		gravel—road construction, resurfacing	Shy-17
	Sidney Sand & Gravel Co. P.O. Box 379 Sidney, OH 45365	Milligan & Milligan Washington Twp. Pit	Washington		gravel—unspecified	Shy-13
	Spring Creek Gravel Co. 4723 Hardin-Wapak Rd. Sidney, OH 45365	Pence Deposit	Washington		sand—portland cement concrete, bituminous concrete, building gravel—building, portland cement concrete, bituminous concrete	Shy-11
	Beaver Excavating, Inc. 4650 Southway St. SW Canton, OH 44706	Jones Deposit	Washington		sand—building gravel—building	Shy-18
Stark	Canton Aggregate Div. of Central Allied Enterprises, Inc. P.O. Box 1387 Station C Canton, OH 44708	Stone Products, Inc., Fulton	Jackson		gravel—road construction, resurfacing	Sk-207
		Canton Aggregate	Plain	outwash terrace	sand—portland cement concrete, bituminous concrete, building, road construction, resurfacing gravel—building, portland cement concrete, bituminous concrete, road construction, resurfacing	Sk-681
		Canton Aggregate	Jackson	kame	sand—portland cement concrete, bituminous concrete, building, road construction, resurfacing gravel—building, portland cement concrete, bituminous concrete, road construction, resurfacing	Sk-689
	A. J. Diana Sons, Inc. P.O. Box 488 Massillon, OH 44646	A. J. Diana Sons, Inc.	Perry		sand—building, other gravel—building, other	Sk-694
	Hartville Sand & Gravel Co. P.O. Box 778 Hartville, OH 44632	Hartville Sand & Gravel	Lake	glacial	sand—portland cement concrete, building, road construction, resurfacing, unspecified gravel—building, portland cement concrete, filtration, unspecified	Sk-182
	Heiser Sand & Gravel P.O. Box 2491 North Canton, OH 44720	Heiser Gravel	Plain	glacial	sand—building gravel—building, road construction, resurfacing	Sk-206
	Richard Heiser P.O. Box 2491 North Canton, OH 44720	Heiser Sand & Gravel	Jackson	glacial	sand—bituminous concrete, building	Sk-688
	Massillon Washed Gravel Co. P.O. Box 167 Navarre, OH 44662	Massillon Washed Gravel Co.	Bethlehem	Pleistocene glacial outwash	sand—building, road construction, resurfacing gravel—building, road construction, resurfacing	Sk-607
	Oster Sand & Gravel Co. 5947 Whipple Rd. NW North Canton, OH 44720	Oster Sand & Gravel, Inc.	Perry	glacial	sand—building, road construction, resurfacing, filtration, other gravel—building, road construction resurfacing, other	Sk-165
	Ross Aggregates, Inc. 6944 Wales Ave. North Canton, OH 44706	Spies Property	Jackson		sand—road construction, resurfacing gravel—road construction, resurfacing	Sk-210



Summit	Stone Products, Inc. 4650 Southway St. SW Canton, OH 44706	Stone Products, Inc., Varley	Canton	glacial	gravel—road construction, resurfacing	Sk-190
	Flesher Sand & Gravel 4140 Laurie Lane Norton, OH 44203	Flesher Sand & Gravel	Norton		sand—foundry, building, road construction, resurfacing, other gravel—building, road construction, resurfacing, other	St-18
	Hammond Brothers 1834 S. Medina Line Rd. Copley, OH 44321	Hammond Brothers	Copley	Pleistocene glacial	gravel—building, road construction, resurfacing	St-39
	Martz Aggregate Co. P.O. Box 27 Hartsville, OH 44632	Bodewin	Springfield		sand—fill gravel—fill	St-26
	H. M. Miller Construction 1225 Waterloo Rd. Mogadore, OH 44260	Krumroy Pit	Springfield		sand—fill gravel—fill	St-46
	Northern Ohio Materials, Inc. 35746 Lake Shore Blvd. Eastlake, OH 44094	Northern Ohio Materials, Inc.	Hudson	Pleistocene kame	sand—building, road construction, resurfacing, other gravel—building	St-41
	Portage Lakes Sand & Gravel Co. 2800 N. Turkeyfoot Rd. Akron, OH 44319	Portage Lakes Sand & Gravel Co. Plant #4	Green	Pleistocene glacial	sand—building gravel—building	St-33
	Riverside Sand & Gravel Co., Inc. P.O. Box 324 Tallmadge, OH 44278	Riverside Sand & Gravel (Acken)	Stow		sand—building, road construction, resurfacing gravel—building, road construction, resurfacing	St-24
	Rubber City Sand & Gravel Co. P.O. Box 7126 Akron, OH 44306	Knight Plant	Green	glacial	sand—building gravel—building	St-9
	Twin Lakes Sand, Inc. 2307 State Rte. 303 Streetsboro, OH 44240	Twin Lakes Sand, Inc.	Coventry		sand—road construction, resurfacing gravel—road construction, resurfacing	St-44
Trumbull	Kinsman Sand & Gravel Co. Kinsman, OH 44428	Twin Lakes Sand, Inc. Kinsman Sand & Gravel Co.	Green Kinsman	glacial	gravel—road construction, resurfacing sand—portland cement concrete, building, road construction, resurfacing, other gravel—building, portland cement concrete, road construction, resurfacing, filtration, other	Pe-67 Tl-9
	Samco, Inc. 10217 State Rte. 534 N Middlefield, OH 44062	Samco, Inc.	Mesopotamia	kame	sand—building, road construction, resurfacing gravel—building, road construction, resurfacing	Tl-12
	Oster Sand & Gravel, Inc. 5947 Whipple Ave. NW North Canton, OH 44720	Oster Sand & Gravel, Inc.	Lawrence	glacial	sand—bituminous concrete, building, road construction, resurfacing, other gravel—building, road construction, resurfacing, other	Ts-1852
Tuscarawas	77 Sand & Gravel P.O. Box 141 Dover, OH 44622	77 Sand & Gravel	Franklin		sand—foundry, unspecified gravel—unspecified	Ts-1916
	Edgar Spring, Inc. P.O. Box 507 New Philadelphia, OH 44663	Midvale Pit	Goshen	Pleistocene glacial outwash	sand—portland cement concrete, bituminous concrete, building, road construction, resurfacing, other gravel—building, portland cement concrete, bituminous concrete, road construction, resurfacing	Ts-1771

## 1983 OHIO DIRECTORY OF REPORTING SAND AND GRAVEL MINING OPERATORS, BY COUNTY—Continued

County	Name and address of operator	Name of pit	Township	Geological unit	Type and principal use	State mine number
Tuscarawas (con't)	Soehnlen Sand & Gravel Co. R.D. 1 Beach City, OH 44608	Soehnlen Bros. Sand & Gravel	Wayne		sand—building, road construction, resurfacing gravel—building, road construction, resurfacing	Ts-1826
	Stewart & Reichman, Inc. Rte. 1 Box 64 Gnadenhuetten, OH 44629	Stewart & Reichman, Inc.	Warwick	Tuscarawas River	sand—building, road construction, resurfacing gravel—road construction, resurfacing	Ts-111
	Stocker Sand & Gravel Co. P.O. Box 176 Gnadenhuetten, OH 44629	Stocker Sand & Gravel	Clay	lake	sand—building, road construction, resurfacing gravel—building, road construction, resurfacing	Ts-69
		Stocker Sand & Gravel	Clay	lake	sand—building, road construction, resurfacing gravel—road construction, resurfacing	Ts-125
	American Aggregates Corp. P.O. Drawer 160 Greenville, OH 45331	Franklin #417	Franklin	glacial	sand—road construction, resurfacing gravel—road construction, resurfacing	Wan-38
Warren	Bellbrook Gravel Co. 2181 Ferry Rd. Bellbrook, OH 45305	Bellbrook Gravel Co.	Wayne		sand—building, filtration, unspecified gravel—building, filtration, unspecified	Wan-24
	Clark Gravel Co. 529 S. East St. Lebanon, OH 45036	J. L. Clark Crushed Stone	Union		gravel—road construction, resurfacing, other	Wan-22
	L & I Trucking, Inc. 1842 Adams Rd. Loveland, OH 45140	L & I Trucking & Construction, Inc.	Hamilton		sand—unspecified gravel—unspecified	Wan-8
	Morane Materials Co. 2500 E. River Rd. Dayton, OH 45439	Franklin Sand & Gravel	Franklin		sand—building, road construction, resurfacing, unspecified gravel—building, road construction, resurfacing, unspecified	Wan-6
		Spring Valley Aggregates	Wayne		sand—building, road construction, resurfacing gravel—building, road construction, resurfacing	Ge-38 <sup>a</sup>
	Morrow Gravel Co. P.O. Box 41350 Cincinnati, OH 45241	Morrow Gravel Co.	Hamilton		sand—bituminous concrete, road construction, resurfacing gravel—bituminous concrete, road construction, resurfacing	Wan-14
	Carl Oeder 3980 Turtlecreek Rd. Lebanon, OH 45036	Carl E. Oeder	Union	glacial	sand—unspecified gravel—unspecified	Wan-41
	Watson Gravel, Inc. P.O. Box 277 Ross, OH 45061	Mason Pit	Union		sand—other gravel—building, road construction, resurfacing	Wan-10
	Briggs Sand & Gravel, Inc. R.R. 4 Box 303 Marietta, OH 45750	Briggs Sand & Gravel, Inc.	Warren	Pleistocene glacial	sand—building gravel—road construction, resurfacing	Wn-508
	Muskingum River Gravel Co. P.O. Box 671 Zanesville, OH 43701	Muskingum River Gravel Plant #2	Grandview		sand—bituminous concrete gravel—bituminous concrete	Wn-38
Washington		Muskingum River Gravel Plant #5	Muskingum		sand—bituminous concrete	Wn-52

Wayne	Trout Sand & Gravel Co. Rte. 4 Marietta, OH 45750	Trout Sand & Gravel Co.	Warren	glacial	sand—building gravel—building	Wn-510
	Union Slag Corp. P.O. Box 652 Marietta, OH 45750	Union Slag Plant #3	Muskingum	Pleistocene glacial	sand—bituminous concrete, road construction, resurfacing, other gravel—bituminous concrete, road construction, resurfacing	Wn-43
		Union Slag Plant #2	Muskingum	Pleistocene glacial	sand—bituminous concrete, building, road construction, resurfacing gravel—bituminous concrete, road construction, resurfacing	Wn-44
	Prairie Lane Sand & Gravel Co. 4401 Prairie Lane Rd. Wooster, OH 44691	Prairie Lane Sand & Gravel Co.	Franklin	Pleistocene glacial	sand—unspecified gravel—unspecified	We-11
Williams	Rupp Construction, Inc. 18228 Fulton Rd. Marshallville, OH 44645	Rupp	Baughman	Pleistocene glacial	sand—portland cement concrete, bituminous concrete, building gravel—building, portland cement concrete, bituminous concrete	We-7
	Zollinger Sand & Gravel 11899 Easton Rd. Rittman, OH 44270	Zollinger Sand & Gravel Co.	Chippewa	Pleistocene glacial	sand—unspecified gravel—unspecified	We-15
	Maumee Stone, Inc. 221 Allen St. Maumee, OH 43537	South Montpelier	Superior		sand—portland cement concrete, building, road construction, resurfacing gravel—building, road construction, resurfacing, other	Ws-6
	Weber Sand & Gravel, Inc. R.D. 1 Edgerton, OH 43517	Weber Sand & Gravel	St. Joseph	Pleistocene glacial outwash	sand—portland cement concrete, building, filtration gravel—building, other	Ws-11
Wyandot	Amert Gravel Co. 4843 Co. Highway 43 Upper Sandusky, OH 43351	Amert Gravel Co.	Eden	Pleistocene	sand—portland cement concrete, building, road construction, resurfacing, other gravel—building, road construction, resurfacing, other	Wt-4
	H & M Sand & Gravel Co. 1022 Blanchard Ave. Findlay, OH 45840	H & M Sand & Gravel Co.	Eden		sand—portland cement concrete, bituminous concrete, building, filtration gravel—building, filtration, other	Wt-15
	Kirby Sand & Gravel, Inc. 4876 Twp. Highway 43 Upper Sandusky, OH 43351	Kirby Sand & Gravel	Eden		sand—building, road construction, resurfacing, filtration, unspecified gravel—building, bituminous concrete, road construction, resurfacing, unspecified	Wt-17

\*See also Greene County.



## 1983 OHIO DIRECTORY OF REPORTING SANDSTONE-MINE OPERATORS, BY COUNTY

County	Name and address of operator	Name of quarry	Township	Geological unit	Type and principal use	State mine number
Carroll	Conotton Valley Quarries Co. 40580 Cadiz, Piedmont Rd. Cadiz, OH 43907	Conotton Valley Quarry	Lee		dimension stone—finished	Cl-102
Columbiana	Don Adams 40814 State Rte. 517 Lisbon, OH 44432	Don Adams	Elkrun		crushed or broken stone—road base	Ca-845
	Beaver Creek Sand & Gravel, Inc. 7219 Salem-Unity Rd. Salem, OH 44460	Beaver Creek Sand & Gravel, Inc.	Salem		crushed or broken stone—road base	Ca-855
Coshocton	Briar Hill Stone Co. P.O. Box 398 Glenmont, OH 44628	Quarry #26	Monroe	Massillon (Pennsylvanian)	dimension stone—rough architectural	Cn-13
		Quarry #3	Tiverton	Massillon (Pennsylvanian)	dimension stone—refractory, rough architectural	Cn-659
		Quarry #32	Monroe	Massillon (Pennsylvanian)	dimension stone—rough architectural	Cn-686
		Quarry #24	Monroe	Massillon (Pennsylvanian)	dimension stone—rough architectural	Cn-692
		Quarry #15	Jefferson	Massillon (Pennsylvanian)	dimension stone—rough architectural	Cn-788
Erie	Cleveland Quarries Co. P.O. Box 261 Amherst, OH 44001	Birmingham Quarry	Florence	Berea (Mississippian)	dimension stone—rubble, finished, curbing, flagging	Ee-21
Geauga	Walter C. Best, Inc. 11830 Ravenna Rd. Chardon, OH 44024	Best Sand, Inc.	Munson	Sharon conglomerate (Pennsylvanian)	crushed or broken stone—foundry sand, fracking sand, other dimension stone—rough construction, other	Gea-3
	R. W. Sidley, Inc. 7123 Madison Rd. Thompson, OH 44086	R. W. Sidley, Inc. Sandstone Quarry	Thompson	Sharon conglomerate (Pennsylvanian)	crushed or broken stone—metallurgical pebble, refractory, aggregate, engine sand	Gea-1
Huron	Set Silica Sand, Inc. 8501 Freeway Dr. Macedonia, OH 44056	Set Silica Sand, Inc.	Bainbridge	Sharon conglomerate (Pennsylvanian)	crushed or broken stone—foundry sand, engine sand, other dimension stone—rough construction, other	Gea-36
	Mesenburg Bros., Inc. R.D. 1 Collins, OH 44826	Mesenburg Bros., Inc.	Townsend	Berea (Mississippian)	crushed or broken stone—riprap	Hrn-8
Jackson	Minerals Research & Recovery of Ohio, Inc. Royal Palm Tower 1, Suite 400 1700 South Dixie Hwy. Boca Raton, FL 33432	Comer Quarry and Mill	Hamilton	Sharon conglomerate (Pennsylvanian)	crushed or broken stone—refractory dimension stone—refractory	Jkn-1018
Knox	Briar Hill Stone Co. P.O. Box 398 Glenmont, OH 44628	Quarry #6	Butler	Massillon (Pennsylvanian)	dimension stone—rough architectural	Kx-12
Lorain	Central Silica Co. 806 Market St. Zanesville, OH 43701	Millwood Sand Division	Union	Black Hand (Mississippian)	crushed or broken stone—glass sand, silica flour, foundry sand, other	Kx-1
	Cleveland Quarries Co. P.O. Box 261 Amherst, OH 44001	Amherst Quarries	Amherst	Berea (Mississippian)	crushed or broken stone—aggregate dimension stone—finished, rough construction, other	Ln-3

Perry	Central Silica Co. 806 Market St. Zanesville, OH 43701	Central Silica Co.	Hopewell	Massillon (Pennsylvanian)	crushed or broken stone—glass sand, silica flour, foundry sand, other	Py-202
Ross	Southern Silica, Inc. P.O. Box 22 Richmond Dale, OH 45673	Southern Silica, Inc.	Jefferson	Sharon conglomerate (Pennsylvanian)	crushed or broken stone—glass sand, foundry sand, engine sand, other	Rs-16
Scioto	Minerals Research & Recovery of Ohio, Inc. Royal Palm Tower I, Suite 400 1700 South Dixie Hwy. Boca Raton, FL 33432	White Gravel Pit	Madison	Sharon conglomerate (Pennsylvanian)	crushed or broken stone—refractory	So-97
	Taylor Stone Co. P.O. Box 186 McDermott, OH 45652	Taylor Quarry	Rush	Buena Vista Mbr. of Cuyahoga Fm. (Mississippian)	dimension stone—flagging	So-47
	Waller Bros. Stone Co. P.O. Box 157 McDermott, OH 45652	Crabtree Quarry	Morgan	Buena Vista (Mississippian)	dimension stone—rough construction	So-76
Stark		Miller Quarry	Morgan	Buena Vista (Mississippian)	dimension stone—rough construction	So-82
	Cricket Minerals 3020 13th St. NW Canton, OH 44708	Cricket Minerals	Pike		dimension stone—rough construction	Sk-214
Trumbull	Hard Rocks, Inc. 9340 State Rte. 5 NE Kinsman, OH 44425	Hard Rocks, Inc.	Kinsman		crushed or broken stone—aggregate	Tl-13
Tuscarawas	Belden Brick Co. P.O. Box 910 Canton, OH 44701	Moomaw Pit	Sugar Creek	Tionesta (Pennsylvanian)	crushed or broken stone—brick facing	Ts-1517
	Pennsylvania Glass Sand Corp. P.O. Box 187 Berkeley Springs, WV 25411	Coxey Works	Wayne	Massillon (Pennsylvanian)	crushed or broken stone—foundry sand, fire and furnace sand	Ts-1660

## 1983 OHIO DIRECTORY OF REPORTING CLAY-MINE OPERATORS, BY COUNTY

County	Name and address of operator	Name of mine	Township	Geological unit	Principal use	State mine number
Auglaize	Sandkuhl Tile Co. R.D. 1 Spencerville, OH 45887	Sandkuhl Tile Co.	Salem	Pleistocene glacial clay	common clay products	Ae-7
Columbiana	Ferris Coal Co., Inc. 371 South St. East Palestine, OH 44413	Negley Mine	Middleton	Lower Kittanning (Pennsylvanian)	common clay products	Ca-505
Coshocton	General Clay Products, Inc. P.O. Box 236 Batic, OH 43804	Drescher Pit	Crawford	Lower Kittanning (Pennsylvanian)	common clay products	Cn-787
Cuyahoga	Hydraulic Press Brick Co. P.O. Box 31330 Independence, OH 44131	Hydraulic Press Brick Co.	City of Independence	Chagrin (Devonian)	lightweight aggregate	Cya-19
Greene	Southwestern Portland Cement Co. P.O. Box 191 Fairborn, OH 45324	Southwestern Portland Cement Co.	Bath	till	cement manufacture, other	Ge-8
Hocking	General Clay Products Corp. P.O. Box 550 Logan, OH 43138	General Clay Products Corp.	Falls Gore	No. 5 fire clay (Pennsylvanian)	vitrified products	Hg-205
Holmes	Belden Brick Co. P.O. Box 910 Canton, OH 44701	Shanesville Pit	Clark	Brookville (Pennsylvanian)	common clay products	Hs-520
	Clark Clay Co. R.D. 6 Millersburg, OH 44654	Clark Clay Co.	Hardy	Putnam Hill (Pennsylvanian)	common clay products, plugging clay	Hs-56
	Holmes Limestone Co. P.O. Box 295 Berlin, OH 44610	Holmes 241 Plant	Hardy	Brookville (Pennsylvanian)	common clay products	Hs-67
Jackson	Paul Adams Coal Co. 46 Vaughn St. Jackson, OH 45640	Adams Pit	Madison		refractories	Jkn-568
	Cedar Heights Clay Co. P.O. Box 295 Oak Hill, OH 45656-0295	Cedar Heights	Madison	No. 5 clay (Pennsylvanian)	refractories	Jkn-1007
	Waterloo Coal Co. P.O. Box 177 Oak Hill, OH 45656	Zoar	Bloomfield, Madison	Kittanning (Pennsylvanian)	common clay products	Jkn-367
Lawrence	Brohard Mining and Development, Inc. White Oak Rd. Pedro, OH 45659	Brohard Mining and Development, Inc.	Elizabeth		refractories	Le-406
Medina	General Wadsworth Brick Corp. 9866 Mt. Eaton Rd. Wadsworth, OH 44281	General Clay Products Corp.	Wadsworth		common clay products	Ma-6
Muskingum	Bowenston Shale Co. 1329 Seven Hills Rd. NE Newark, OH 43055	Frazeysburg	Jackson	Flint Ridge & Middle Mercer (Pennsylvanian)	vitrified products	Mum-776
	Hammer Clay Co., Inc. 12398 Old Rainer Rd. Roseville, OH 43777	Hammer Clay Co., Inc.	Newton		common clay products	Mum-848
Paulding	General Portland, Inc. Pennsular Portland Cement Div. P.O. Box 160 Paulding, OH 45879	Paulding Quarry	Crane	Detroit River & upper Dundee (Devonian)	cement manufacture	Pg-1



Perry	Dennis Clay Co. State Rte. 37 Box 10922 New Lexington, OH 43764	Dennis Clay Co.	Harrison	No. 5 clay (Pennsylvanian)	common clay products	Py-296 <sup>1</sup>
Putnam	Glandorf Tile Co. Glandorf, OH 45848 Miller Bros. Clay Works, Inc. Lock Box 162 Ortovoile, OH 45876	Glandorf Tile Co. Miller Bros. Clay Works, Inc.	Monroe Monterey		common clay products common clay products	Pm-7 Pm-9
Scioto	McCoy Clay Co. Rte. 2 Box 111 South Webster, OH 45682	McCoy Clay Co.	Madison		refractories	So-94
Stark	Cricket Minerals 3020 13th St. NW Canton, OH 44708 East Ohio Limestone Co. Midway Rd. Box 25 Hartville, OH 44632 Kohl Industries Rte. 4 New Philadelphia, OH 44662 SME Cement, Inc. P.O. Box 234 Middlebranch, OH 44652 Statewide Landfill Co. 1401 Timken Place SW Canton, OH 44706	Cricket Minerals East Ohio Limestone Co. Black Hawk Mine #1 Pit Statewide Landfill Co.	Pike Lake Bethlehem, Pike Lake, Plain Canton		common clay products, glazed ware common clay products refractories cement manufacture common clay products, landfill cover	Sk-214 Sk-663 Sk-217 Sk-SME <sup>2</sup> Sk-219
Tuscarawas	Belden Brick Co. P.O. Box 910 Canton, OH 44701	Wallick Pit	Franklin, Wayne	Brookville, Lower Kittanning (Pennsylvanian) Putnam Hill (Pennsylvanian) Lower Kittanning (Pennsylvanian)	common clay products common clay products	Ts-1841 Ts-1517 Ts-1646
	Eberhart Coal Co., Inc. 6406 Cleveland Ave. SE East Sparta, OH 44626 L & M Minerals, Inc. P.O. Box 54 Millersburg, OH 44654 Stone Creek Brick Co. P.O. Box 116 Stone Creek, OH 43840 Zoar Mining Co. P.O. Box 550 Zoar, OH 44697	Shanesville Eberhart #2 Clay Mine Luikart Stone Creek Brick Clay Mine Zoar Mining Co.	Sugar Creek Sugar Creek Sugar Creek Dover Mill Jefferson Sandy	Brookville (Pennsylvanian) Brookville, Lower Kittanning (Pennsylvanian) Brookville (Pennsylvanian) Lower Kittanning (Pennsylvanian)	common clay products refractories common clay products vitrified products common clay products	Ts-1939 Ts-1620 Ts-1914 Ts-1557 Ts-540
Wyandot	Claycraft Co. P.O. Box 866 Columbus, OH 43216	Claycraft Plant #1 Clay Pit	Crane	alluvial clay	common clay products	Wt-7

<sup>1</sup>Operated by Crooksville Coal Co. until 8/83.<sup>2</sup>No mine number has been assigned by the Division of Mines.

## 1983 OHIO DIRECTORY OF REPORTING SHALE-MINE OPERATORS, BY COUNTY

County	Name and address of operator	Name of mine	Township	Geological unit	Principal use	State mine number
Ashland	London Tile, Inc. P.O. Box 31 New London, OH 44851	Biglow	Ruggles	Bedford (Mississippian)	vitrified products	Ald-1
Columbiana	Summitville Tiles, Inc. Summitville, OH 43962	Summitville Tiles, Inc.	Franklin		common clay products	Ca-205
Coshocton	General Clay Products, Inc. P.O. Box 236 Baltic, OH 43804-0236	Drescher Pit	Crawford	Lower Kittanning (Pennsylvanian)	common clay products	Cn-787
Franklin	Claycraft Co. P.O. Box 866 Columbus, OH 43216	Claycraft Plant #4 & #5 Shale Pit	Jefferson	Bedford (Mississippian)	common clay products	Fn-1
Harrison	Bowerston Shale Co. P.O. Box 199 Bowerston, OH 44695	Bowerston	Monroe	Conemaugh (Pennsylvanian)	vitrified products	Hn-152
Henry	Napoleon Brick and Tile Works 1201 Willard St. Napoleon, OH 43545	Napoleon Brick and Tile	Napoleon		common clay products	Hy-4
Hocking	General Clay Products Corp. P.O. Box 550 Logan, OH 43138	General Clay Products Corp.	Falls Gore	No. 5 fire clay? (Pennsylvanian)	vitrified products	Hg-205
Holmes	Belden Brick Co. P.O. Box 910 Canton, OH 44701	Shanesville Pit	Clark	Brookville (Pennsylvanian)	common clay products	Hs-520
	General Clay Products, Inc. P.O. Box 236 Baltic, OH 43804	Troyer Pit	Clark	Lower Kittanning (Pennsylvanian)	common clay products	Hs-77
	Holmes Limestone Co. P.O. Box 295 Berlin, OH 44610	Holmes 241 Plant	Hardy	Putnam Hill (Pennsylvanian)	common clay products	Hs-67
Lawrence	Lone Star-Marquette P.O. Box 8 Pedro, OH 45659	Bear Run	Decatur	Vanport (Pennsylvanian)	cement manufacture	Le-308
Licking	Bowerston Shale Co. P.O. Box 199 Bowerston, OH 44695	Hanover	Hanover	Logan (Mississippian)	vitrified products	Lg-501
Lucas	SME Cement, Inc. P.O. Box 234 Middlebranch, OH 44562	Sylvania	Sylvania	Dundee (Devonian)	cement manufacture	Is-5
Mahoning	SME Bessemer Cement, Inc. P.O. Box 790 Newcastle, PA 16103	Quarry #8	Poland		cement manufacture	Mg-608
Marion	Glen-Gery Corporation P.O. Box 279 Caledonia, OH 43314		Tully	Bedford (Mississippian)	common clay products	Mn-7
Medina	General Wadsworth Brick Corp. 9866 Mt. Eaton Rd. Wadsworth, OH 44281	General Clay Products Corp.	Wadsworth		common clay products	Ma-6
Muskingum	Columbia Cement Corp. P.O. Box 1531 Zanesville, OH 43701	Lyle Quarry	Newton	Maxville (Mississippian)	cement manufacture	Mum-24

Stark	Hammer Clay Co., Inc. 12398 Old Rainer Rd. Roseville, OH 43777	Jonathan Mine	Newton	Maxville (Mississippian)	cement manufacture	Mum-91
	Kohl Industries Rte. 4 New Philadelphia, OH 44662	Hammer Clay Co., Inc.	Newton		common clay products	Mum-848
	U.S. Ceramic Tile Co. 10233 Sandville Rd. SE East Sparta, OH 44626	Black Hawk Mine	Bethlehem, Pike	Brookville & Lower Kittanning (Pennsylvanian)	reclamation	Sk-217
	Belden Brick Co. P.O. Box 910 Canton, OH 44701	U.S. Ceramic Tile Co.	Pike		glazed ware	Sk-170
Tuscarawas		Wallick Pit	Franklin, Wayne	Strasburg (Pennsylvanian)	common clay products	Ts-1841
		Moomaw Pit	Sugar Creek	Brookville & Tionesta (Pennsylvanian)	common clay products	Ts-1517
		Finzer-Belden	Sugar Creek	Brookville & Tionesta (Pennsylvanian)	common clay products	Ts-1646
		Shanesville Pit	Sugar Creek	Brookville (Pennsylvanian)	common clay products	Ts-1939
		Evans Pit	Rush		common clay products	Ts-1884
	L & M Minerals, Inc. P.O. Box 54 Millersburg, OH 44654	Stone Creek Brick Co. Shale Pit	Jefferson		vitrified products	Ts-1558
	Stone Creek Brick Co. P.O. Box 116 Stone Creek, OH 43840	Sugarcreek Clay and Limestone, Inc.	Sugar Creek		common clay products, other	Ts-162
	Sugarcreek Clay and Limestone, Inc. P.O. Box 402 Sugarcreek, OH 44681	Zoar Mining Co.	Sandy		common clay products	Ts-538
	Zoar Mining Co. P.O. Box 550 Zoar, OH 44697	Zoar Mining Co.	Sandy		common clay products	Ts-540



**1983 OHIO DIRECTORY OF REPORTING GYPSUM-MINE OPERATORS**

County	Name and address of operator	Name of mine	Township	Geological unit	State mine number
Ottawa	Celotex Corporation P.O. Box 280 Port Clinton, OH 43452	American No. 2	Portage	Silurian	Oa-2

**1983 OHIO DIRECTORY OF REPORTING SALT-MINE OPERATORS**

County	Name and address of operator	Name of mine	Township	Geological unit	State mine number
Cuyahoga	International Salt Co. P.O. Box 6920 Cleveland, OH 44101	Cleveland Mine	City of Cleveland	Salina (Silurian)	Cya-30
Lake	Morton Salt Co. Division of Morton Thiokol, Inc. P.O. Box 390 Painesville, OH 44077	Fairport Mine	Painesville	Salina (Silurian)	Lke-6

**1983 OHIO DIRECTORY OF REPORTING SALT-BRINING PLANT OPERATORS, BY COUNTY**

County	Name and address of operator	Name of plant	Township	Geological unit	State mine number
Licking	R. H. Penick 1504 Blue Jay Rd. Newark, OH 43055	Penick	Newark	"Newburg" (Silurian)	Lg-45
Summit	Diamond Crystal Salt Co. 2065 Manchester Rd. P.O. Box 149 Akron, OH 44309-0149	Diamond Crystal Salt Co.	Coventry	Tymochtee (Silurian)	St-9127
	P. P. G. Industries P.O. Box 31 Barberton, OH 44203	P. P. G. Industries	Franklin		St-9042
Wayne	Morton Salt Co. 151 S. Industrial St. Rittman, OH 44270	Morton Salt Well Field	Milton	Salina (Silurian)	We-9129

## 1983 OHIO DIRECTORY OF REPORTING PEAT-MINE OPERATORS, BY COUNTY

County	Name and address of operator	Name of mine	Township	Type and principal use	State mine number
Champaign	Sphagnum Moss Peat Farm 9797 Thompson Rd. West Liberty, OH 43357	Mrs. Thompson Pit	Harrison	humus—live bait preservative	Cpn-9
Logan	Weaver's Peat Co. c/o Weaver's Lawn and Garden Products, Inc. P.O. Box 333 Bowling Green, OH 43402	Weaver's Peat Co.	Liberty	mulch	Lgn-33
Mahoning	Beaver Peat Products Co. P.O. Box 136 Damascus, OH 44619	Beaver Peat Products Co.	Goshen	mulch	Mg-609
Williams	Lingvai Peat Co. Rte. 2, Box 103 Edgerton, OH 43517	Lingvai Peat Pit	Center	mulch	Ws-17
Wyandot	Agricultural Laboratories, Inc. P.O. Box 12567 1145 Chesapeake Ave. Columbus, OH 43212	Agricultural Labora- tories Humus Plant	Crawford	humus—legume inoculation	Wt-14





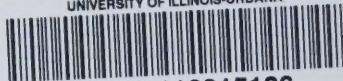








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